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THE

VETERINARIAN;

A

MONTHLY JOURNAL OF VETERINARY SCIENCE

FOR 1866.

VOL. XXXIX—VOL. XII, FOURTH SERIES.

EDITED BY

PROFESSORS MORTON AND SIMONDS,

ASSISTED BY

PROFESSORS VARNELL, TUSON, & BROWN.

Ars Veterinaria post medicinam secunda est.—*Vegetius.*

LONDON:

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

PUBLISHED BY LONGMANS, GREEN, & CO.,

PATERNOSTER ROW.

33988

PRINTED BY
J. E. ADLARD, BARTHOLOMEW CLOSE, E.C.

2662

THE

VETERINARIAN.

VOL. XXXIX. No. 457. JANUARY, 1866. Fourth Series. No. 133.

Communications and Cases.

CATTLE PLAGUE.

At a time when several important exhibitions of stock are held in the metropolis and elsewhere, it was natural that serious questions should arise, concerning the probable influence of the prevailing malady among cattle, in the minds of intending exhibitors and also of the promoters of the exhibitions. Under the most favorable circumstances there was room for apprehension; but, in the absence of very stringent precautions, the risk of extending the disease was advanced to the degree of an almost positive certainty.

The idea of abandoning the annual shows altogether seemed to find but little favour. The supporters of the "institution" were inclined to look the danger fairly in the face, and to meet it boldly. The result has proved how efficacious stringent measures are when honestly carried into effect and backed by the unanimous support of all the interests concerned. Some anxiety was manifested by the public in reference to the consequences of what must be admitted to have been somewhat delicate experiments, but possibly the spice of danger gave an extra interest to the proceedings and contributed to their success; at any rate, the satisfactory termination of the two largest of these exhibitions, the Smithfield Club and the Birmingham show, has been accepted as a triumph. Had an outbreak of cattle plague occurred the effect upon the public mind would have been most depressing, as it would have demonstrated the utter

uselessness of all the preventive measures that science could suggest.

That the victory has not been gained without much thought and no little labour, a reference to the resolutions and proceedings of the Smithfield Club will prove. Among other things the following circular was sent to each of the exhibitors:

Important Notice to Exhibitors.

SMITHFIELD CLUB.

CORNER OF HALF-MOON STREET, PICCADILLY;
London, November, 1865.

SIR,—I have been requested by the Committee appointed by the Smithfield Club to draw your particular attention to the following points, which are considered most necessary in consequence of the cattle plague, and especially to paragraph No. 3:

1st. The Committee strongly recommend that all animals be conveyed in covered carts from the respective farms on which they have been fed to the railways by which they are to be forwarded to London. This precaution would materially diminish the risk of infection between the farm and the station.

2nd. The Committee also strongly recommend that all animals be sent in horse-boxes on the railways. The attention of the different boards has been urgently drawn to this subject—and while it is to be regretted that the directors of the principal lines have not acceded to the request made to them in respect to the reduced rate of charge, still it is hoped that their refusal will not preclude exhibitors using horse-boxes.

The Taff Vale Railway will comply with the request to convey cattle and sheep in horse-boxes at the usual cattle rate.

The Glasgow and Scotch South-Western Railway will do the same, as far as they possibly can.

The following railways enclosed with their replies a copy of the printed conditions on which they convey animals to agricultural shows, viz.:

* Midland Railway,
† North British Railway, } see Conditions at the end.

3rd. I am requested to state that the Committee has decided that no animals (cattle, sheep, or pigs) will be admitted into the Smithfield Show conveyed in any *hired* cattle carts, vans, &c., which have not been cleansed and disinfected under the superintendence of the officer appointed for that purpose by the Club.

It will therefore be necessary for you to make *your own arrangements* with some *one* of the *following parties*, who have agreed to have their conveyances so cleaned and disinfected, and not to use them for any other cattle during the days the show animals will be arriving.

Each cart, &c., that is authorised to bring animals to the Hall will have fixed on it a certificate to that effect, and signed by myself.

It will be necessary for you to state your requirements to one of the *undermentioned authorised carriers* at once, with full instructions as to the

hour at which he will have to meet your stock, and any other particulars, viz.:

JOHN LOWE, York Road, New Cattle Market, London, N.
W. T. TURNER, Cattle Market, London, N.
C. H. PACKMAN, Cattle Market, London, N.
J. W. MARKHAM, Cattle Market, London, N.
JOHN MILLER, Leman Street, Whitechapel, London, E.
JAMES MILLER, 14, Somerset Street, Aldgate, London, E.

A uniform rate of charge has been adopted by all the above, viz.—one pound for each beast; and one pound for each van of sheep or pigs, from any London railway terminus to the hall; to include conveyance of the food sent with the animals.

CAUTION.—No stock will be admitted unless the rules of the Club have been complied with, viz., as to having the veterinary certificate (attached to admission order) duly filled up and signed—and all the other regulations, as sent to you in my circular of the 2nd instant.

4th. I am again to urge upon you the advisability of sending your stock to the show earlier than usual, in order to allow of time for the veterinary examination which will be made at the doors of the hall, to ascertain that no symptoms of the disease have exhibited themselves since it was examined by your veterinary surgeon on its leaving your farm.

5th. I take this opportunity of repeating the other regulations, as contained in my circular of the 2nd instant, in order that there may be no possibility of any exhibitor not complying with the same.

That no beast, sheep, or pig, that has been exhibited at any show within *one month* previous to the Smithfield Club Show, be allowed to enter the Agricultural Hall.

That each exhibitor be required to produce a certificate from a qualified veterinary surgeon, showing that each animal is free from the rinderpest, and has not been on the same farm where infected animals have been within twenty-one days previously.

That the Council has appointed a Committee to make arrangements respecting disinfected conveyances in which animals for the show may be carried from the railway termini in London, and to communicate with the railway authorities in reference to the conveyance of animals on their respective lines (*see particulars under No.* 3 *on other side.*)

That every animal shall undergo an inspection on its arrival at the hall; and that the Royal Veterinary College be requested to make arrangements for the constant attendance of veterinary inspectors.

That with the concurrence of the Agricultural Hall Company, the show shall not remain open so long as usual, and that it shall close on the Thursday evening instead of the Friday.

6th. I am also requested by the President to draw the attention of exhibitors to the great danger there would be, if any animals were to be taken back to the country, after having been exposed in contact with other animals, during the show, and to the various risks of infection during transit—

and he strongly recommends that purchasers should, as a matter of precaution, make arrangements to have all animals slaughtered in London.

I have the honour to be,
Sir,
Your obediently,

B. T. BRANDRETH GIBBS,
Hon. Secretary.

MIDLAND RAILWAY.

The following regulations will be observed by this Company, with reference to the conveyance of implements and live stock to and from the above show:

1. Stock and implements to the show to be charged full rates.
2. From the show, if sold, full rates.
3. From the show, if unsold, to be conveyed free back to the station whence they were sent, at *owner's risk*, on the production of a certificate from the Secretary of the Agricultural Show, or an endorsement under the signature of the exhibitor, to the effect that they are really unsold.
4. All the above to be carried at owner's risk.
5. No hay or straw will be allowed in the trucks with live stock, but exhibitors will be permitted to provide for themselves sand, sawdust, or tan.
6. The carriage of all live stock and implements must be *prepaid* at the station from which they are forwarded.
7. Regulations Nos. 1, 2, and 3, as to cattle and horses, apply only if the traffic be conveyed in cattle-waggons and by goods trains.
8. Poultry and dogs to be charged full rates both to and from the show.
9. No reduction in the ordinary rates for horses or cattle when conveyed in horse-boxes.
10. Parties requiring the exclusive use of a horse-box for only one animal to be charged as for two horses.

JAMES ALLPORT, *General Manager.*

DERBY, *November*, 1865.

NORTH BRITISH RAILWAY COMPANY.

The terms upon which the North British Railway Company are prepared, until further notice, to convey live stock, poultry, and implements over their line for exhibition at the shows of agricultural societies are as follows:

1. The following privileges are allowed only in respect of live stock and implements *sent for exhibition*, and to none other, and they apply to the North British Railway only. They are granted only on the express condition that the North British Railway Company are to be entirely free from all responsibility or claim for compensation for delay, loss, damage, or in any other respect whatsoever and wherever arising, in regard to the persons, animals, or things so conveyed, and whether in going or returning.
2. Horses, cattle, sheep, and pigs, carried in cattle-waggons, when conveyed by ordinary goods trains, will be charged the usual fares and rates over the North British Railway when going to the show; and, provided that they remain *bonâ fide* the property of the sender, will be returned free to the North British Station at which they were originally loaded or received.
3. Horses and cattle carried in horse-boxes, and implements conveyed by goods or passenger trains, as may suit the convenience of the Company,

will be charged the usual rates when going to the show; and, provided that they remain *bonâ fide* the property of the sender, will be returned free to the North British Station at which they were originally loaded or received.

4. When horses, cattle, sheep, or pigs, in cattle-waggons, or implements, are, at the desire of the sender, conveyed by passenger trains, full rates will be charged both in going to the show and returning.

5. No live stock or implements will be entered to *return free* unless the sender produces and leaves with the Company's agent at the station to which they were originally consigned a written declaration signed by himself, that the live stock or implements were conveyed to such station from the station to which he wishes they should be returned, that they were exhibited at the show, and that he has not sold, nor made an agreement to sell them, but that they still remain *bonâ fide* his property.

6. The railway charges made under the authority of these instructions must in all cases be prepaid before the stock or implements can be allowed to leave the station either in going or returning.

7. Poultry conveyed either by goods or passenger trains will be charged full rates both ways.

8. Persons in charge of stock, poultry, or implements, will be charged according to the class of carriage in which they travel. If they travel by goods trains, they will be charged third-class fare only.

THOMAS K. ROWBOTHAM, *General Manager.*

GENERAL MANAGER'S OFFICE, EDINBURGH;
March, 1863.

Previously to the admission of cattle to the Agricultural Hall the various carts and vans to be employed in the conveyance of stock were thoroughly washed with soap and water, with potash; and after being allowed to become dry, were disinfected with Sir W. Burnett's disinfecting fluid, applied under the supervision of a Government inspector deputed to that duty. During the whole time allowed for the admission of animals inspectors were in attendance to examine the stock in each van before admission unto the hall; and after the removal of the animals from the conveyance the vehicle was swept and disinfected before being allowed to leave the hall for the purpose of fetching other stock from the different railway stations. After all the animals were in their place veterinary supervision was continued without cessation during the days of the show, and for the whole time only a single case of sickness was reported—an instance of *eczema epizootica*.

It is much to be deplored, however, that our gratulatory tone respecting the cattle plague must cease at this point. Extending our observations to the country generally, we find no cause for rejoicing. The plague, so far from being stayed, is advancing with more rapid strides, and the worst anticipations of those who, without being alarmists, estimated at the first the true character of the malady, have been terribly

realised. Those who were inclined to scoff at "exaggerated accounts," as they were pleased to term them, have been met by an argument whose logic admits of no question.

The returns from the Veterinary Department of the Privy Council show a decided increase in the number of cases. For the week ending November 18th we have 2669 animals attacked, during the next week there were 3610 attacked, the next week the number amounts to 3828, and the next week it advances to 5356. In the metropolitan police district we have during the same weeks the numbers 216, then 78, then 44, and then an increase to 129. Many sheds that had escaped at the time of the greatest prevalence of the disease have become infected during the last few weeks. In several instances dairymen have, in defiance of advice, bought in fresh stock, and lost them in the course of a fortnight; in other cases the newly purchased animals have remained healthy up to the present. From the experience dairymen have had of the effects of the disease, there is but little disposition now to keep animals in a shed when the plague has once broken out. The occurrence of a single case is generally the signal for the slaughter or sale of the rest of the stock; a system which, while it diminishes the number of actual cases of disease, nevertheless causes the positive loss of a large number of animals in the district.

In the country Cheshire and Yorkshire claim a melancholy pre-eminence among other counties in respect to the number of cases of disease that have occurred recently. For the week ending December 2nd there were returned for Yorkshire 938, and for Cheshire 374 cases. In the following week, up to December 9th, Yorkshire suffered to the extent of 1037 cases, and Cheshire 596.

Such facts are too painfully suggestive to render any comment necessary, and they account for the growing desire that is being manifested for the adoption of more stringent measures for the prevention of what is fast becoming a national calamity.

The Royal Agricultural Society, giving expression to the feelings of the agricultural cammunity, have adopted a series of resolutions which we subjoin.

1. That it is the opinion of the Council of the Royal Agricultural Socicty of England, that the most effectual means of suppressing the cattle plague would be to stop for a time all fairs and markets. If this is impracticable, then the Council would suggest the following regulations :

2. That any cattle, sheep, or pigs, exhibited for sale in a market or fair in or near any town, be forthwith branded, and not allowed to leave such town alive.

3. That all cattle, sheep, or pigs, offered for sale elsewhere than on the premises of the owner, or in any place whatever where they have not been twenty-one days previously, be branded and slaughtered within forty-eight hours on (or near) the spot where such offer has been made.

4. It is submitted that all foreign cattle, sheep, and pigs, should be slaughtered at the port of disembarcation, and their skins disinfected forthwith; but in case this should be considered too stringent a proceeding, then the owner or consignee of any imported cattle, sheep or pigs, or his agent, shall be obliged to state, on their arrival in port, to what town or place he intends to forward them. After being duly inspected and certified to be free from disease, they shall be marked with a special brand, and be allowed to proceed, and shall be slaughtered at such town or place.

5. That no cattle, sheep or pigs, be allowed to travel upon any public road from auy farm or place upon or in which there is or has been within two months any case of cattle plague.

6. That the penalty for infringing any of these regulations be £20 for each animal sold, driven, or in any way dealt with contrary to such regulations, one half of the penalty in every case to go to the informer.

7. That local inspectors be not at liberty to go upon any farm without the consent of the occupier unless authorised by a magistrate of the district.

8. It is submitted that the necessary orders for carrying out these resolutions be issued by the Government, and that the local authorities be required to enforce them, so that the practice may be uniform throughout the country.

9. That the Government be requested to institute experiments on an extensive scale in order to ascertain the real character of the cattle plague, and to test various methods of prevention and cure.

By Order of the Council,

H. HALL DARE,
Secretary.

These resolutions were submitted to Lord Granville and Sir George Grey, on December 7th, by a deputation from the society. Some discussion took place upon the various points suggested, but the Government did not hold out any great hope that the decided steps proposed by the society would be taken, on the ground that such a course as the one advised was not warranted by the present feeling of the country.

It cannot be doubted that the establishment of any measures which interfere with the free course of trade must entail inconvenience and even hardship upon individuals, even to a serious extent; but it is difficult to see how an emergency like the present can be met without the employment of adequate means. The paramount question now is, how to prevent the further extension of the disease, and not how far certain portions of the community may be affected by the adoption of the necessary measures.

Besides the course taken by the Royal Agricultural Society an important meeting was held at St. James's Hall, on December 14th, under the presidency of Viscount Combermere.

Delegates from the principal agricultural societies of England, Scotland, and Wales, were present, and a long discussion took place. The following resolution was carried, with only three dissentients:—"That the meeting agrees with the resolutions of the Council of the Royal Agricultural Society, and urges upon the Government to carry them out; and further, if they see it possible, that no live cattle whatever shall be removed from the premises, but slaughtered on the spot."

In the afternoon a deputation was appointed to seek an interview with the Home Secretary. The chairman introduced the deputation, and advocated the total suppression of all transit of cattle, unless under Government regulations. Fifty out of the fifty-three members of the deputation were in favour of a total suppression of the removal of stock, even upon a man's own farm. Sir George Grey promised the deputation to lay their views before the Privy Council.

Thus, on all sides we gather that people are awake to the extent of the evil, albeit singularly averse to making any efforts to prevent it. Not only must the Government establish rules for their guidance, but it is called upon to see them carried into practice. Not satisfied with being told what to do, they plaintively ask to be made to do it; very like an independent, free, intelligent people this, flattering somewhat to our national vanity, an amusing spectacle for the admiration of Europe. It is admitted that a certain course is necessary, professions are made of our readiness to submit to the inevitable inconvenience that must attend it; and yet forsooth, with all our powers of combination, our freedom of action, and our asserted unanimity of feeling, and, above all, our professed belief in the efficacy of the measures we propose, we lack the moral force to try our own remedy for a month unless we are literally compelled to submit to the terrors of the law.

Under all the circumstances of the case we had better be meek, and confess that we have been tried, and have not come well out of the fire. We have had a stern duty to perform, and we have fretted and fumed, and used improprieties of speech, and generally behaved ourselves in an unseemly manner, all because we have been allowed to take our way too much for our own good, and have shown more ingenuity in evading our obligations than anxiety to fulfil them.

From the commencement of the outbreak the real difficulty has been want of unanimity between the Government and the people. In truth, the public did not recognise the importance of the matter, and accordingly refused to submit to necessary restrictions. If the Orders in Council had from

the first been scrupulously obeyed, it is our belief that we should not now be discussing the question at all. Instead of being accepted as they were intended, they excited general opposition; they were met by comments which were more free than courteous; and now, after exhausting every expletive in our tongue in protesting against the arbitrary treatment we were compelled to endure, we fiercely demand to be treated with three times more severity, and certainly we deserve to have our wishes granted.

The present aspect of the subject is not comforting, but there is reason to hope that, now the danger is fully appreciated, something like uniformity of action will be established, and that each individual owner of stock will himself be his own ruler. A community composed of such members would not require the aid of penal statutes to enforce the proper precautions.

GLEANINGS FROM THE PROCEEDINGS OF THE BRITISH PHARMACEUTICAL CONFERENCE.

By Professor Tuson, Royal Veterinary College.

Pharmacy has long held a much higher position on the Continent, among the pursuits which men follow as a means of subsistence, than it does in England. This fact is, doubtless, explained by the circumstances that abroad the professors and dispensers of medicine are compelled to be persons of education, to undergo a lengthy and comprehensive professional training, and to pass a severe examination before the law will permit them to practise their calling; while in our own country any one, be he literally "apothecary, ploughboy, or thief," may open shop and vend, not only the perfectly harmless, but likewise the virulently poisonous things that are believed to cure the many ills that flesh is heir to. One of the evil consequences of such a fearful state of things is, that cases of accidental poisoning are constantly occurring which are traceable, not only to negligence, but also to the grossest ignorance on the part of drug vendors. Another direful result arising from the ignorance of many druggists is, that the quality, the mode of preparing, and the method of preserving the medicaments they sell are so bad as often to render them incapable of producing upon patients the effects expected by physicians and surgeons who prescribe them. The medical man is dumb-foundered, his patient does not profit by his treatment, his ability

begins to be questioned, and his reputation becomes impaired. As a matter, then, of self-defence, it is highly important, while the law continues to permit an open and unrestricted sale of drugs, that those who *prescribe* those drugs should be as fully as possible possessed of the knowledge which will enable them to ascertain the quality, purity, strength, &c., of the various substances which they direct to be administered to their patients; in other words, the loose manner which obtains respecting the sale of medicines is one of the strongest reasons which it is possible to advance in the advocacy of a patient and thorough study of materia medica, pharmacy, and chemistry, by the students of human and veterinary medicine. I have stated that there exists no legal impediment in the way of the most untutored persons dispensing and selling drugs; nevertheless, it is extremely gratifying to know that, thanks to the energetic exertions of the late Jacob Bell, and the other founders and supporters of the Pharmaceutical Society of Great Britain, probably no town in England is now without its one or more "pharmaceutical chemists," who have been doubly prepared for the important duty of dispensing and selling medicines by having served an apprenticeship behind the counter, and by having voluntarily passed an examination at the Pharmaceutical Society subsequently to their attending courses of instruction in materia medica, pharmacy, botany, and chemistry, both general and practical. The number of the new generation of pharmaceutists, thus admirably prepared for the duties of their calling, is so rapidly increasing, that we may hope to see ere long the old "chemist and druggist" supplanted by the well-educated and scientifically, as well as practically, trained "pharmaceutical chemist" of modern times. That the pharmaceutical body has not only the desire for scientific advancement, but that it is actively marching onwards in this age of progress, is demonstrated by the fact that many of its members conduct original investigations requiring and manifesting an intimate acquaintance with both theoretical and practical chemistry, microscopy, physics, and the other branches of science constituting the basis of their professional knowledge. The results of these investigations are collated and form the subject-matter of papers that are read either at the monthly meetings of the Pharmaceutical Society or at the yearly gatherings of the British Pharmaceutical Conference. Now, the first meeting of the British Pharmaceutical Conference was held during the latter part of the summer of 1863; the second at Bath, in September, 1864; and the third at Birmingham, in September, 1865; so that the undertaking

is in its infancy. But it has been fostered with so much spirit and energy, and the success attending the efforts of its promoters and supporters has been so satisfactory, that the British Pharmaceutical Conference may be henceforth regarded as a permanent national institution of a similar character to the British Association, the Social Science Congress, the Provincial Medical Association, and others, the aim in establishing which has been to promote social and scientific intercourse, to afford opportunities for the friendly interchange of thoughts and experiences, and to further those departments of knowledge most interesting and valuable to the members of the respective associations or societies.

I have been induced to intrude the foregoing remarks upon the attention of the readers of this Journal in order to show how a young profession, so far as England is concerned, like pharmacy, has, by cultivating and applying scientific thoughts and attainments, established its claim to hold a prominent position in the ranks of the higher and more intellectual pursuits of the present period. Let us hope that the day is very close at hand when the veterinary surgeons of Great Britain and Ireland will follow the example set them by other professions, in holding annual meetings in various parts of the United Kingdom, whereat not only scientific papers will be read and discussed, but, also, old friendships renewed and strengthened, new ones formed, and, in fact, an open and unreserved exchange of professional experience and mutual kindly feeling fostered. Such a movement would enable the public to form a higher and truer estimate of the value of the services which the qualified and modern veterinarian is capable of rendering, and to place them in that social position to which they should be entitled by virtue of their education and the nature of their calling.

There are few veterinary surgeons, I believe, who question the importance and value of an intimate acquaintance with pharmacy, so that I have not hesitated to pen the following "Gleanings," in the hope that the perusal of them may be both interesting and profitable, in keeping the readers of the *Veterinarian* informed of novelties respecting the kind, sources, preparation, adulteration, &c., of the agents they employ in attempting the prevention of disease, and the cure of the patients by which it is attacked.

Contenting myself with these few prefatory observations, I will now invite attention to the following remarks on—

Blue Pill.—The activity of blue pill is considered by some to depend upon its containing *metallic* mercury in an extremely minute state of division, and by others its efficacy

is referred to *oxide* of mercury. Mr. Benger, of Manchester, has instituted a series of chemical and microscopical experiments, the results of which are corroborative of the former view, and demonstrate that the extremely small quantity of mercury discovered as oxide is quite inadequate to produce the effects of blue pill. Mr. Benger, in his paper, refers to the desirability of obtaining medicines of constant and uniform composition, qualities which are not always possessed by the blue pill at present in the market; and after alluding to the tedious and difficult nature of the process hitherto followed in the manufacture of this medicament, he proceeds to describe a new method for its preparation:—"136 grains of bichloride of mercury are dissolved in 4 ounces of distilled water, and the solution raised to the boiling-point; 1 ounce of protochloride of tin is then put into a beaker, with 2 drachms and 2 ounces of cold water; when the chloride of tin has dissolved, the mercurial solution is to be added, and the mixture stirred for a few seconds. The precipitated mercury, in the form of a nearly black powder, is then allowed to subside, washed several times by decantation with dilute hydrochloric acid, to remove any traces of tin, and finally with distilled water. The water is then drawn off, as nearly as possible, by means of a pipette; 30 grains of sugar, 100 grains of powdered liquorice, and about 1 drachm of glycerine added, and the mass transferred to a warm porcelain slab, where most of the remaining water is evaporated at a low temperature, a sufficiency of glycerine and liquorice being used to make the mass weigh 300 grains."

The chemical principles and facts upon which is based this precipitation process for obtaining metallic mercury in extremely fine particles are familiar to all attentive students of chemistry. If a solution of bichloride of mercury ($HgCl_2$) be mixed with a sufficiency of a solution of protochloride of tin (SnCl), the former salt loses the whole of its chlorine, which the latter salt gains, a decomposition which is represented by the following formula:

In solution.	In solution.	In solution.	Precipitated.
$Hg\,Cl_2$	$+\,2\,Sn\,Cl$	$=\,2\,Sn\,Cl_2$	$+\,Hg$ (metallic mercury).

The chief points in the process requiring attention are that the tin-salt should be dissolved in *cold* water, and not in a sufficient quantity of it to form a very dilute solution; and that, to avoid the admixture of calomel with the precipitated mercury, an excess of tin-salt should be employed to decompose the bichloride of mercury. Sugar is added, in the hope

that it may preserve the mercury from oxidation, *i. e.* maintain it in its metallic condition, and the glycerine is used to prevent the mass from becoming dry.

Mr. Benger concludes his paper by stating that "these appear to be the only precautions necessary to produce a 'blue pill' which is, I believe, superior to that obtained by the old process, and which can be prepared by any man who possesses two porcelain bowls, a gas-burner, a tripod, a few grains of common-sense, and a little knowledge of pharmaceutical manipulation."

Mr. Benger's process can be easily and rapidly performed, and is certainly one which should be tried by those veterinarians who have been accustomed to avail themselves of the alterative qualities of blue pill, if only for the purpose of ascertaining whether or not the new preparation may be relied upon to produce more certain and regular effects on patients than the old one.

(*To be continued.*)

THE MUTUAL VETERINARY DEFENCE SOCIETY. "DEFENCE, NOT DEFIANCE."

By Thomas Greaves, M.R.C.V.S., Manchester.

The great want which has been so long felt, and which has been so frequently and so earnestly alluded to in various leaders in the *Veterinarian*, is now supplied. A society has at length been formed, and a code of rules adopted, for the purpose of assisting and defending any of its members who may be at any time in the unfortunate position of being called upon to defend their pecuniary interests or professional character from a threatened action at law arising out of or connected with their veterinary duties. The society was instituted in Manchester on the 7th September, 1865, being formed by a deputation of three members, each selected from and deputed by the Liverpool Veterinary Medical Association, the Yorkshire Veterinary Medical Society, and the Lancashire Veterinary Medical Association. These gentlemen met, and were presided over by Peter Taylor, Esq., the President of the Lancashire Veterinary Medical Association. For four hours they entered fairly and fully into the merits of the question, completely and deliberately considering every proposition submitted to them, keeping

steadily in view the practical element. As their president they elected Robert Lucas, Esq., of Liverpool; and perhaps a fitter person is not to be found. His knowledge in all matters appertaining to the horse, either professionally or in cases of arbitration eminently recommends him, while he is not only an experienced veterinary surgeon, but his horse repository causes him to have almost numberless transactions in connection with horses, and he is extensively known to possess broad, enlightened, and liberal views; thus, it may be said, as to the value of his opinion and advice in difficult and uncertain horse cases, as it was said of Napoleon in the field, "his presence is worth 40,000 men."

If a society so constituted required a passport to the profession, and it was felt to be necessary to expatiate upon the advantages which must attend such an institution, I could advance many very important reasons that would at once render such to be self-evident; but to a practical mind, conversant with the many difficulties and dangers with which our calling is beset, the value of such a society will strongly commend itself. Past experience has shown us that no member in the profession is exempt from legal liability. It is not a necessity in the case that the practitioner must be a young, inexperienced man, or a slovenly, careless practitioner, to excite the ire and give occasion for an attempt to extort money, or for vexatious legal proceedings by a litigious client. We find the practitioner of great experience, and even eminent in his calling, the highly educated and exemplary practitioner, yea, even a professor of the veterinary art, is not exempt; any one of them may become involved, and liable to a prosecution for malpractice or deterioration in value, and be mulcted in damages to a heavy amount. I must here remark, that Mr. E. A. Friend very properly observes, "I assume and sincerely believe that I am speaking to a body of men who are too honorable to wish to screen themselves from any responsibility which legitimately and fairly belongs to them, either as members of society generally, or as appertaining to them as members of a highly important profession;" and I earnestly refer my readers to the very excellent paper upon this subject, read before the Liverpool Veterinary Medical Association, by Mr. E. A. Friend, and recorded in the *Veterinarian* for July and August last; also to his excellent remarks upon the same subject, recorded in the *Veterinarian* for 1841, page 665.

A multitude of examples could be advanced of veterinary surgeons getting involved in litigation; and, rather than incur exposure and the uncertainty of the result of going to trial,

they often submit to an extortion or acquiesce in an unjust demand. Some of these are so grossly unreasonable that it would be cruel and heartless to forsake a brother practitioner, and allow him to be fleeced by an unscrupulous and perhaps a purse-proud client. We must not deceive ourselves, and overlook the fact that the "sinews of war" are required in standing an assize trial; *and since we are all sailing in the same boat*, let us all contribute to one common fund, for by so doing we acquire a strong position, and are capable of affording mutual support. Let us for one moment contemplate the moral effect of such support. We see a practitioner, as above indicated, surrounded and firmly supported by, not only the clearest heads, but the most experienced and most influential men in his profession; his case is carefully and deliberately examined; it is tried, in point of fact, by disinterested and, of all the men in the world, the most competent to try it; they perceive, at a glance, the weak points, if any, and fortify them; all the strong points are brought prominently forward; no point of importance escapes them; no bungling in the preparing of the case is permitted; it is minutely manipulated into the hands of counsel, who is also attentively assisted and prompted, and the ablest veterinary evidence procured. Is all this nothing? It is everything; and by such a proceeding the character of the practitioner is maintained and his pocket spared.

We will suppose a case of a young practitioner recently from the College, and not one who has barely escaped being plucked, but one whose educational progress has been marked as superior to many, if not all, his compeers. He has a practice to make, and locates himself in some rich agricultural district, in a place formerly jointly occupied by a "cow-leech" and a "castrator." Our young friend gets an introduction to some of the landowners and farmers, and he commences practice; but before he has time to fully establish himself in the good wishes and the confidence of his employers he has the misfortune to lose a colt from castration; or it is just possible, even when the greatest care is exercised, the animal has been disabled in the act of casting; or a cow dies after difficult parturition; or a horse becomes attacked with some illness of which he dies within a week after he has passed him sound. The whole is at once placed to the credit of inexperience, ignorance, and malpractice on the part of the young practitioner, and the report carried, like a firebrand, over the whole district by his *friends* the cow-leech and castrator, who, fearing their occupation is gone, embrace this as a glorious opportunity to regain the

same, and therefore use all the eloquence and persuasion in their power to damage the veterinary surgeon in his character; and, if possible, they get the owner to claim compensation for his loss, saying they will appear for him as witnesses, and give their large experience, so as to floor the new vet. Now, some persons would say this would be a difficult thing to do; but in reply I must say their knowledge of employers in the country is very limited. I have met with what would be considered even the better class of farmers, who place far more faith in the nostrum receipt of some old woman than in the genuine prescription of a veterinary surgeon; and very many of them, I am sorry to say, are easily persuaded in a matter that is at all likely to influence their pocket. Well, suppose a claim is made, what can our young vet. do but pay? As things at present stand, there is only the alternative of starvation; but if he is a member of this society, and feels satisfied in his own mind that everything has been properly attended to, he may safely set them all at defiance, and rest contented that he will have justice done him, and will emerge from the trial with, not only a character unscathed, but with the countenance and support, and even the *éclat*, of the influential and enlightened public of the whole district.

Then, again, there is another feature of this society that demands a word of approbation. I allude to the provision made for the widows and orphans of unfortunate members of our profession. It cannot be regarded as anything short of a disgrace to a profession, numbering from two to three thousand members, that some provision has not been made for the families of those who may have been cut off before they were enabled to make any provision for their support. All are not fortunate alike in this world's goods; and what a comfort it would be to many on their death-beds to know that those nearest and dearest to them will be cared for by the members of the profession to which their life has been devoted.

The rules at present may not be exactly the best that could be framed, but they are sufficient to form the groundwork. Let all join and each bear a hand in rearing a structure that will in the end tend to bind us together in a true masonic brotherhood.

"Go, labour on while it is day;
The long dark night is hastening on."

All applications for printed rules and requests to be enrolled as members are to be made to the secretary, Mr. Morgan, V.S., Liverpool.

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 572, vol. xxxviii.)

What is a *concave, cupped,* or *upright* foot?

Having briefly alluded to what is generally supposed to constitute a flat foot, it may not be unreasonable to pass in review some of the peculiarities connected with concave, cupped, or upright feet. Flat and upright feet are so diametrically opposed to each other, as regards outward form and appearance (when extreme cases are taken as examples), that we may not be far wide of the mark if we assume these cases represent disease; at least, it is so in some instances. For the sake of illustration, it may not be out of place if we take the foot of a mule as our guide, in endeavouring to ascertain what an upright foot really is; I say really, because ten individuals, on examining one horse will sometimes offer as many opinions as to the uprightness of the foot. One man shall represent the seller, another the purchaser, a third a friend of the seller, a fourth a friend of the purchaser, and so on, who will all advance modifications of each other's opinions; then comes the examiner as to soundness, and the remainder of the half score are lookers-on, making up the number. I have not the least doubt that, as before stated, ten different opinions, or modifications of opinions, will be offered by the party. If this be so, it tends to lead us to inquire how it is possible that such a diversity of opinion exists. It may be premised that there is no *definite* rule to guide one in forming an opinion, in the same way there would be in speaking of an upright column. If an architect views a portion of a building, and believes it out of the perpendicular, or not upright, he will cause an instrument called a plumb to be placed near it for the purpose of ascertaining the truth. There are no obstacles thrown in *his* path—he can, in a moment of time, test the uprightness of the erection, simply because he has, as well as all other persons of the same class, an undeviating and established rule for his guidance, and that rule is accepted as being correct and sufficient by all concerned in the erection of such structures. These are works of art, be it observed, and are liable to error. On the other hand, the upright foot is supposed to be in every case the work of the Creator; I say supposed to be, because we have reason to believe that many cases are produced by artificial means. To

the educated observer, it will be at once manifest how difficult it is to compare the work of the Creator with the handiwork of the craftsman; hence, the diversity of opinions upon matters relating to soundness in horses.

With a view to understand what constitutes an upright foot, we must first take into consideration one fact, namely, that no two horses' feet are exactly alike. This may be partially explained from the undoubted evidences presented to us that we seldom find two horses formed, as it were, in one mould. In trying to fix what is, and what is not, an upright foot, we must bear in mind that, as no two horses are formed alike, their shapes in every part of their fabric must of necessity be modified in some way. For example, a thoroughbred horse, measuring sixteen hands in height, and well proportioned in every way, may have a well shaped foot; that is to say, the shape of his entire self is everything desirable in the estimation of his beholders, and his feet are all as well shaped as the other parts; in short, the animal is said to be as perfectly formed as it is possible to conceive; no part seems too large or too small; the feet not too flat or too upright; his movements are graceful in the extreme, and every limb, or portion of a limb, seems to act in unison with its fellow. This, then, may be looked upon as a perfect animal, so far as nature has performed her part. Of course, I have not attempted to explain anything in mathematical language. Should an animal be so constructed that every limb has more than ordinary leverage, or, in other words, great obliquity is manifest in his lower joints, the probability is, the front feet will be found inclined to flatness. If, on the other hand, the joints before mentioned, are very upright, and but little elasticity found in them, we may expect to have concave and upright feet. It must be remembered, these remarks refer *only* to animals which have escaped the various arts and sciences provided by man. I am very much disposed to think it amounts to almost an impossibility to state positively and unmistakably what is a concave, cupped, or upright foot, simply because we cannot lay down a fundamental rule as our guide. Were we able to state what this, that, or the other part should be according to measurement, we should then, I have no doubt, soon discover the secret; at all events, we should be in a position to test the accuracy of every one's opinion; for an opinion is, after all, but the peculiar conception formed by man in, or upon, some particular object. 'Tis true, the opinion of one man conversant with a given subject, owing to his large experience of, and his long association with it, must, or should be, of more value than the

opinion entertained on the same subject by a person of little experience and of short acquaintance with it; at the same time, it is argued by the latter that the superior education given to youths in the present day enables them to grapple with, and understand, what they know in a much shorter time than formerly. There is some truth in this assertion, doubtless, but in dealing with the question at issue it is to be understood that an average amount of learning is brought to bear in all instances. In stating what I believe to be a concave, cupped, or upright foot (speaking relatively to disease, of course), I should be disposed to state that an animal possessing feet of such uprightness as appears not in accordance with the shapes of other parts of his frame, and, that those feet can be, and are, recognised easily by a common observer as not in accordance with other structures, and, that the idea of his being *muley*-footed is given to the observer; then, I conceive that animal may be said to have upright feet.

Should an animal have one foot upright (*unmistakeably* upright) and the other foot of a natural shape, we should have reason to infer that disease has done *its* work. It may be believed that if twenty or a hundred horses are examined as to the size, and shape, and direction of their feet, we shall find but few to resemble each other. As the shape of their bodies and limbs vary, so will their feet vary also.

Is there any advantage in purchasing a horse with concave feet? Undoubtedly there are many advantages, provided the concavity or uprightness does not render the movements stilty and unpleasant. It is an advantage, inasmuch as, the feet are not so liable to injuries during progression: this must be acknowledged by every horseman. Again, there never is a difficulty in fixing shoes to such feet, unless previously injured by very extensive disease. Such kind of feet are also generally composed of better horny material than feet of a different shape. In the treatment of flat, very flat, feet by farriers, it is often found that they pare away too much of the sole, and thus injure the feet for a very long time. Should the farrier pare away too much of the sole in an upright foot (which is not likely, as there is but little attrition going on in them), it is not felt in the same degree as in the case of a flat foot. The uprightness above hinted at, it will be observed, has relation more particularly to healthy feet.

In these observations it will not be unprofitable to dwell for a brief space upon upright feet in a diseased state. If in the examination of a horse whose foot I observed to be rested—not pointed—the muscles of the front leg relaxed, and the os coronæ standing over the pedal bone, the superior

part inclined forward, I should look very markedly at it, and strongly suspect that something was wrong. This symptom is frequently observed to exist in horses, and nothing can be detected to lead or to warrant a veterinary surgeon to reject the animal. Still, there can be but little doubt of disease, and that to *some* extent, being present, or the animal would not favour the limb in the manner described. This symptom is often seen in well-bred animals with flat feet, especially those found at country race-meetings.

Another advantage in having upright feet is that, in case of corn, our remedies are easier applied. A three-quarter shoe, for example, can be placed upon a foot of this kind, better than upon a foot of the reverse shape. It has been said that horses with upright feet ought not to be affected with corns. My experience tells me that some of the most inveterate corns, of an *incurable* description, have been met with in upright feet. In aged horses, where disorganization of the internal parts has been known to exist for some months or years, the feet will become more upright every year, owing, no doubt, to a habit acquired by the animal to relieve the parts from pain or pressure. We have to take into consideration the fact of a horse suffering more acutely from diseased feet than man, when similarly circumstanced. The immense weight the former has at all times to sustain when standing, renders him more susceptible to pain than the latter; besides, ill or well, he must work, and do as much, too, perhaps, when in pain as though he were free from it. I do not wonder in the least that an animal should ease a foot or a leg when at rest, or the moment he is permitted to stand still, because I believe the act is performed more to relieve some ache or pain than as a habit, as some persons suppose. We often have our attention called to cases of this sort, and are closely interrogated as to the reason. Our reply invariably is to the effect that there may be some disease in progress, which will require a long time to become visible or developed, or the animal, like ourselves, has contracted the habit of relieving his limbs from weight at every opportunity. It is more than probable that instinct teaches animals to relieve these parts, as well as reason enables us to do so. Unless any cause could be assigned (visible sign, of course,) such as altered structure, I should invariably feel inclined to pass the question; but, if the examiner can discover any thing which he knows is contrary to nature, he is justified in mentioning it, not for the purpose of preventing the sale of the animal, but merely to make known to the parties interested, that nature has been

interfered with, although not to the extent to merit a certificate other than of practical soundness.

I am *not* of opinion that upright feet should be pointed at as being unsound, unless there is inflammation present; and not even then, if the animal will stand the test of a severe examination. It should be considered *practically* sound. If, however, the animal is found with *one* foot more upright than its fellow, the examiner should look very suspiciously at it, and not be satisfied with a mere superficial view. These are cases where much diversity of opinion exists, and in which the examiner is likely to get himself into trouble. Two feet shall be presented, one apparently smaller than the other; both are measured, and found to measure alike; still, there is a manifest difference in them. This will be found in the *direction* from above downwards, or, in plainer language, it has reference to the uprightness of the two feet. I suspect these are often old cases patched up, and necessarily require very careful inspection. In such a case as this I would take a little extra care and time—time being especially required in such cases. If, on a proper scrutiny of the parts, the animal passes every test, it is better for the examiner to write *practically sound.*

(*To be continued.*)

CATTLE MURRAIN IN INDIA.

OFFICIAL REPORT.

Proceedings of the Board of Revenue, dated 17th June, 1864.

Read the following letter from the collector of Kurnool, dated 17th May, 1864, No. 78:—

1. I have the pleasure to forward a report drawn up by Veterinary Surgeon Thacker on the result of his visit to this district, to investigate the cattle murrain, which from the papers circulated on the subject appears to be prevalent in all parts of India.

2. It is not necessary for me to recapitulate what will be found detailed in Mr. Thacker's report. The personal interest which I felt in his inquiry, and the knowledge that my presence might very possibly be necessary to give that authority to his proceedings which would be requisite for success, made me desirous of accompanying Mr. Thacker throughout his inquiries, a wish which I was unable to carry out, owing to the order of Government placing me in temporary charge of the Bellary district. Before leaving Mr. Thacker I had the satisfaction of knowing that he was settled in the village of Ravypad, where cattle murrain was raging, and where he would have the fullest opportunity of testing his proposed treatment, and thoroughly investigating the disease.

3. The result of the full experience gained by Mr. Thacker at this most favorable opportunity, is more encouraging than was to be expected:

seventy-five per cent. of all the cases treated, were cured, and there seems no room to doubt that the disease is amenable to treatment, and that by proper measures its ravages can be very greatly checked.

4. The mode of treatment recommended by Mr. Thacker, and a clear account of the symptoms of the disease, form an appendix to his report. This paper will be translated into Teloogoo, and published as speedily as possible in the district gazette. I also propose to strike off separate copies of the paper in Teloogo, for sale to the Ryots at one anna. These instructions can in the same way be published in all the district gazettes of the Presidency, and thus be made generally available. The collected papers on the subject show not only that the disease is universal, but also that no rational treatment has yet been any where attempted.

5. While improved medical practice should greatly reduce the per centage of mortality amongst cattle attacked with the disease, it is to remedial measures in lessening the risks of contagion that Mr. Thacker looks chiefly, for reducing the losses now occasioned by the epidemic. It is quite certain that nothing short of compulsion by a penal enactment can enforce the adoption of the measures advocated by Mr. Thacker. Knowing that the natives were perfectly aware of the contagious nature of the disease, I was astonished, on accompanying Mr. Thacker in his medical visits, to find the utter recklessness of their practice. The fact is that the nature of their houses, and the want of necessary appliance and assistance, render it impossible for a native to carry out strict isolation of diseased cattle in his own premises. It is unquestionable that at present the sound and diseased cattle mix together promiscuously in the Ryot's house and yard, and those not attacked are driven out at the usual hour for pasture with the village herd, spreading everywhere the seeds of a most dangerous malady. Unless some means be found to put a stop to this, it will be impossible to eradicate the disease. It may lie dormant for a time, but will again and again break out, and keep down the stock of the country in spite of its increasing wealth.

6. I have conversed frequently on this subject with Mr. Thacker, and after much consideration can think of no means so suitable for the end in view as those suggested in his report. A short act embodying the provisions he recommends might be passed in the local Legislative Council, and a breach of its provisions might be made punishable under Sections 269 and 270 of the Indian Penal Code.

7. I do not by any means advocate the universal application of such an act, as it might be made an instrument of much tyranny and injustice; but power should be given to the Government to apply it to any particular locality, and the local authorities who applied for it, would be responsible for its necessity, and for its provisions being enforced with discretion.

8. The following are the few simple provisions which it would be necessary to embody in the Act:—

First.—That where the Act has been declared applicable to any locality, the inhabitants of any village might be required, on the order of the collector, to erect sheds for the accommodation of the sick cattle, in some locality outside the village, fenced so securely as to prevent the possibility of healthy cattle getting in, or sick cattle getting out.

Second.—That a respectable agriculturist of the village be appointed to the charge of the sick lines, under the control of the village Munsiff, and be remunerated by a fee on each sick animal under his charge, payable on recovery.

Third.—That on any animal being attacked with murrain, the owner must at once report the fact to the village Munsiff, and remove it to

the sick lines, subject for neglect to punishment under Section 269 of the Indian Penal Code.

Fourth.—The person appointed to the charge of the sick lines, should be responsible for proper care of the sick animals, and should provide their gruel and medicines, to be paid by the owner at a fair rate, to be fixed from time to time by the collector of the district.

Fifth.—That the owner of any building in which a sick animal has been for a period of twenty-four hours, or upwards, be compelled forthwith to whitewash the walls and cow-dung the floor of the same, subject to a fine not exceeding rupees 50.

9. It may be remarked that no provision is made for the burial of the bodies of animals that have died of the disease, a point in England much insisted upon: the customs of the country render such unnecessary in India. A dead animal is here immediately removed by the chucklers, and eaten, apparently with perfect impunity, however death may have been caused.

10. It is impossible to bring forward statistics to show the actual losses of cattle by this disease in this Presidency. I believe it to be a moderate estimate to state that, on an average, at least two thousand head of cattle are swept away yearly in every district by the epidemic, which is as constant in its ravages as cholera amongst human beings. Fortunately the weaker and less valuable animals are in general the victims, but even with this compensation, the loss to the agricultural community is enormous, and its effects must be felt in checking the increase of cultivation which would otherwise progress even more rapidly than at present, and thus lowering the public revenue. In the interests of the state it is imperative that efficient measures be taken to grapple with this evil.

11. There is a striking fact in Mr. Thacker's report which cannot fail to be remarked. The villagers of Ravypad, while the disease was raging amongst their cattle, as soon as the revenue authorities had left the neighbourhood, ceased to avail themselves of Mr. Thacker's assistance, and had so little confidence in his treatment, that, rather than undergo the trouble it entailed on them, they preferred to let their cattle die by leaving them to nature. The services of a skilful veterinary surgeon were available gratis, and yet he would have remained without opportunities of practice, in the midst of a violent epidemic, if Mr. Arbuthnott had not returned to Cumbum, and *ordered* the Ryots to place their sick cattle under his charge.

12. It is true that after evident success attended his treatment, all this was changed: an emissary even came from a village in the Cuddapah district, where the disease was prevalent, to ask for Mr. Thacker's assistance, when the fact of his cures became known. But the difficulty experienced in introducing the new practice makes me doubtful whether any commensurate results will follow the mere publication of a rational mode of treatment, the proper adoption of which ought to result in reducing the mortality 50 per cent. under this disease. Not only, as Mr. Thacker suggests, must the medicines be for some time provided gratis to the Ryots, and the advantages of the new treatment be impressed upon them by the revenue authorities; but, I think, that a veterinary surgeon with a liberal staff pay, should be appointed permanently to the special duty of teaching the natives how to treat the disease, and of enforcing the necessary remedial measures.

13. Such an officer should move from district to district, wherever his services might be most required, and there should be attached to him a staff of pupils from the Madras Medical College, who might be willing to adopt this branch of the healing profession. These would rapidly acquire a

thorough knowledge of the pathology of the disease, and of its treatment, and by their means the benefits of superior veterinary knowledge could be extended more widely every year.

14. I can speak from personal experience of the zeal and patience displayed by Mr. Thacker while engaged in his recent inquiries in this district, and I am confident that the duties I have sketched above, could not be entrusted to better hands. On this occasion he was not sent with such an object, but simply to investigate the disease, and I have not felt justified in detaining him longer in the district after that end has been attained.

15. I think that the result of Mr. Thacker's mission must be considered satisfactory, and as his visit to this district has caused him a loss of military pay, it only remains for me to recommend that an honorarium of 1000 rupees be paid to him, as well as the usual travelling allowance from Bangalore to Kurnool and back. The former charge can be met out of the salary for the assistant Collector, and the latter out of the travelling allowance to officers, unexpended in the budget of charges for the district for the last official year.

Enclosure No. 1.

Report of Veterinary Surgeon J. Thacker.

1. Observing my services placed at the disposal of Government to investigate the causes of an epidemic disease amongst cattle in the Kurnool district; I started with all practicable haste, hoping to find further instructions on reaching the district.

2. On the 21st of January I arrived at Kurnool; the collector being absent, I proceeded to join Mr. Arbuthnott's camp, and there, for the first time, had the opportunity of reading the correspondence on the subject.

3. Early in February the collector returned from leave, and, on his advice, I accompanied him on Jummabundy, in order that his influence might be available in inducing the Ryots to place their sick cattle under treatment, and further the objects of my mission.

4. Although there were rumours of the disease being prevalent in all parts of the district, as well as in the Taluks where we were located, we found, on close investigation, such reports referred to ordinary diseases of cattle, and not to the special malady, or murrain, which it was my business to investigate.

5. It was not until the 4th of March that we were summoned by the villagers to Boodacherla, and found the true disease called in Teloogoo "Pedda Moosa Rogum." On pitching our camp in this village we found four buffaloes labouring under the disease, and it was reported that there had been seven previous cases of which, being left to nature, three only had died.

6. On the morning of our arrival one animal died, and I was enabled to have a *post-mortem* examination.

7. Until this time I was only acquainted with the disease by report, which had led me to consider it allied to, or identical with, the murrain that has for many years been known to Veterinarians; the result of this *post-mortem*, and many others which I was afterwards enabled to make, confirmed my opinion on this point.

8. In this village only four cases came under my treatment, two of which were successful. At this period I must confess to much anxiety as to the success of my mission, it being doubtful whether a simple mode of treatment could be laid down to cope with so formidable a disease, and the apathy I found amongst the natives rendering its application doubly difficult.

9. At this time the collector (Mr. Minchin) was ordered to Bellary, and both he and the head assistant collector (Mr. Arbuthnott) had to proceed to Kurnool on duty. Before they left Cumbum, a violent outbreak of the disease was reported in the neighbouring village of Ravypad, and I arranged with the revenue authorities that my camp should be pitched there during their enforced absence.

10. On our arrival in Ravypad, on the 11th of March, we found that 129 cattle had been attacked, of which 69 had died, 17 recovered, and the remainder were at that time in various stages of the disease. In communication with the collector arrangements were at once made for my entering vigorously into the field of inquiry which was thus presented. On the 12th of March, Messrs. Minchin and Arbuthnott left Cumbum, and from the date of their departure the co-operation of the people with my inquiry entirely ceased. They had no grounds for confidence in my skill; the mode of treatment prescribed gave them more trouble than they liked; and they objected to being moved out of their accustomed habits. With the exception of such cases as had been placed in my hands before Mr. Minchin's departure, no fresh cattle were entrusted to me for treatment, although the disease was raging throughout the village; fortunately Mr. Arbuthnott returned to Cumbum as soon as he was able, and by the exertion of his influence, I was enabled to take full occasion of the opportunity here afforded me of carrying out the inquiry for which I was sent to the district. Up to the close of April, I had 44 cases under treatment, of which 11 were fatal and 33 recovered, a proportion which, considering the character of the disease, exceeded my expectations, and has proved satisfactorily its amenability to medical treatment.

11. Of the eleven fatal cases I must remark that almost all were poor weakly animals, and from my experience, cattle that were in good condition and well cared for, when placed early under treatment, recovered in almost every instance.

12. Before the end of April, the disease had died out in Ravypad, and being unable to find further scope for practice in that quarter, I rejoined the collector in Kurnool. At this time no epidemic of a violent character prevails in the district; the disease in a mild form is to be found in various localities, but as it offers no distinguishing differences of type from that which I have seen, and sufficiently investigated in Ravypad, Mr. Minchin concurs with me in thinking that the object for which I was sent to the district has been attained.

13. I must here state that there is one type of the disease, most prominently dwelt on in all the printed reports, which I have have had no opportunity of witnessing. In this form of the malady the animal breaks out in pustules immediately after the attack, every other symptom being exactly similar to that form of the epidemic which I have met with. The natives state that the disease has this peculiar symptom during, or shortly after the rainy season, and not during the dry months in which I have been in the district. I am of course unable to state whether any modification of treatment may be necessary for this form of the disease, and it will be for the Government to consider whether further investigations on this point be called for.

14. Mr. Minchin is of opinion that it would not be right to detain me in the district for the length of time which might elapse before such cases could come under my observation. In my medical treatment of the disease my chief aim has been to confine myself to the use of such remedies as are procurable by the poorest Ryot in the most remote village; it would have been a mockery to prescribe expensive English medicines which could never have been available to the agriculturists of this country. The remedies

employed, camphor, nitre, opium, and catechu, are procurable in every bazaar. Datoora is a weed that grows in the fields, and Cherayta is a plant found in almost every jungle. These medicines, in different proportions for the different stages of the disease, are the only ones which I found it necessary to administer- A detailed account of treatment will be found in an appendix. I would only here further remark that a most important point is supporting the animal with nourishing gruel, which the natives appear to have entirely neglected, as it is their practice to leave a sick beast for many days without food of any description, in itself sufficient to cause death.

15. Many suggestions have been offered as to the causes of this disease. It has been attributed to general uncleanliness; want of care; deficiency of proper food; atmospherical influences; and variations of food at different periods of the year. I am only prepared to state that the disease is evidently epidemic in character, and in my opinion unquestionably contagious. With respect to original causes, I would only say in the words of an acknowledged authority on such subjects, "It is better to confess these are unknown, rather than by a laboured and pretended explanation to endeavour to conceal our ignorance."

16. My experience during this inquiry has made me acquainted to some extent with the domestic economy of the natives as regards their treatment of cattle. I have been for weeks in their villages; have attended all my patients in the houses of the owners; and have thus, for the first time, became familiar with the native habits. I have found that valuable cattle have been well cared for, and the majority of cases have occurred in poor animals, which either from old age or the poverty of the owners, have not received such good treatment. A deficiency of food unquestionably creates a tendency to take the disease, and gives the patient less chance of successfully combating it. The growing improvement in the condition of the agricultural class is a matter of notoriety, and, as I have before remarked, there is no neglect apparent in the care bestowed upon cattle that are considered worth the expense.

17. The cattle are housed with their owners, and are as well off as themselves in this respect. The general want of cleanliness in the houses of the people must be a cause of unhealthiness to man and beast; it seems almost beyond legislative remedy.

18. Considering that the natives of this country have been agriculturists for generations, I have been surprised at the utter ignorance displayed by them in the treatment of cattle under disease.

19. They are particularly quick in detecting the existence of disease, and of any changes which take place in it; their prompt perception of such changes is most marked, and with a proper mode of treatment laid down for their guidance should assist them to successful practice.

20. In this district when murrain has attacked the cattle, there has hitherto been no attempt at treatment whatever; the animals being left to struggle under the malady ten or twelve days without any effort even to support life, and I doubt not that in many instances they might have been saved without medical treatment, if properly nursed and supported.

21. I consider the chief cause of the rapid extension of the disease after it has appeared in a village to be the extraordinary apathy and carelessness of the people in the matter of contagion. Those whom I have met seemed all to acknowledge that the disease was contagious, but none made the slightest effort towards prevention: isolation of sick cattle was never attempted, and the constant advice I gave on this subject was entirely disregarded. I have myself seen a miserable buffalo calf, not worth five rupees, with fœtid mucous discharge from his nose and eyes, in close contact

with a healthy bullock that was worth at least a hundred rupees. On remonstrating with the owner, he could only give idle excuses as to the difficulty of enforcing isolation, and such is the apathy of the native character, that nothing short of compulsion by legislative enactment can, I think, remedy the evil.

22. As a professional man sent specially by Government to investigate a subject of such importance, and which has given rise to such extensive references, and general consideration, it appears necessary for me to offer an opinion on the various suggestions that have been made for the treatment of the disease.

An injection of sugar of lead into the eyes, nose, and ears, has been recommended: such would be attacking a local symptom, instead of the disease, and I need hardly say must be utterly useless.

23. One officer speaks with astonishing confidence of possessing an infallible specific in common black salt. To call this simple purgative infallible is simply empirical.

24. Captain Nelson has suggested vaccination as a remedy. There is nothing in the nature of the disease to lead one to suppose that the introduction of the cow-pox virus would serve as a prophylactic. As remarked by Assistant-Surgeon Bidie, murrain is a totally distinct disease from small-pox, and attacking different structures. Perhaps by vaccination was intended the introduction of matter from an animal infected with murrain to a healthy animal, or as more properly called inoculation. Inoculation is frequently referred to in the reports as the most likely remedial agent, and one which many seem most anxious should be tried.

25. Cases of inoculation in early times are reported in all histories of murrain, but the authenticity of these cases, or at all events the efficacy of the practice, is doubted by all the authorities of the present day. There can be little doubt that inoculation would produce the disease, but there is nothing to lead us to suppose that the disease thus taken would be in a mild form, or that having been once attacked by the disease would guard an animal from all future danger.

26. It appears to me that the practice of inoculation would be inducing what it is our chief object to prevent, a propagation of this most dangerous malady.

27. Such being the received professional opinion of the day, from which I see no reason to differ, I could not conscientiously carry out any experiments in this way without being prepared to give compensation to the owners of cattle for possible or rather probable loss.

28. As the collector stated his inability to provide any means for such an expenditure, I was unable to attempt the experiment.

29. Should the Government differ in opinion and consider inoculation deserving of a thorough trial, I can see no means for its being done except on their own cattle.

30. I offer now such general remedial measures as appear to me to be advisable; their practicability I leave to be determined by the proper authorities.

31. The medical treatment of cattle under an attack of the disease will be found detailed in an appendix to this report. On this part of the subject I will only add, that simple as are the remedies I have prescribed, I fear that the Ryots will take no care for their correct preparation, nor till they have had practical proof of their value, would they go to the expense of purchasing them, absurdly trifling as that expense would be.

32. I beg to recommend that the remedies prescribed in my treatment be made up by Government, and kept in store by the Tahsildars for distribution. As I before stated, they are procurable in every considerable

village, and after the Ryots have had experience of the benefits attending their use, there is no doubt they will procure them for themselves.

33. I now proceed to describe such preventive measures as are necessary to check the spread of this malignant epidemic. For this purpose perfect separation of the sick from the healthy animals of the village should be enforced. On an animal being attacked, the owner should be compelled at once to remove it to a separate locality, appointed for the purpose, outside the village. A tope conveniently situated, might be set apart for this object, or if none be available, it would be necessary to erect sheds to protect the sick animals from exposure to the sun or rain. This locality should be carefully fenced, so as to prevent the possibility of healthy animals, by any accident, coming in contact with the diseased. The objections that would be raised to such a measure by the Ryots, would arise chiefly from the difficulty they would experience in providing attendance for their sick cattle, at a distance from their own houses. To meet this, one of the servants of the village should be appointed to this special duty, who might be remunerated by fees levied from the owners of cattle under his care.

34. As a further precaution, in the case of any house, or stable, from which a diseased animal has been removed, the walls should be white-washed, and the floors cow-dunged.

I believe that I have now stated all the measures which I consider desirable to be enforced, and have laid down a mode of treatment which, if pursued judiciously, would be followed by reasonable success. I am convinced, however, that the natives will require much guidance in the matter: if left to themselves it is probable that very little will be done, and after some time the state of affairs will relapse into the present condition of reckless neglect on the appearance of this epidemic.

36. The loss to the community and the Government by the present state of things is so great, a loss which, in my opinion, is in a great measure preventable, that I think it would be to the true interests of Government to appoint a qualified officer to the special duty of instructing the Ryots, how to treat the malady, and observing that the necessary measures are carried out.

37. An intelligent officer moving from district to district where his services might be most required, by gaining the confidence of the people, combating their weaknesses, and insisting on the performance of the necessary measures to cope with the disease, might in a great measure bring it under control, and would unquestionably save thousands of rupees worth of valuable property every year.

(Signed) J. Thacker, Veterinary Surgeon.

APPENDIX TO REPORT.

Murrain.

Called in Teloogoo "Pedda Moosa Rogum" is an epidemic, contagious, typhoid fever, commencing in a general congestion, with mucous discharge from the eyes and nose, followed by inflammation of the "Abomasum," or last compartment of the stomach and intestines; accompanied at certain seasons of the year with falling off of the hair, formation of pustules on the skin, and always ending in violent purging mixed with mucus and blood.

Symptoms.

First Stage.—The attack generally comes on gradually, evinced by occasional shivering fits, the appetite slight, the animal appears dull, with

drooping ears, and a rough staring coat; the bowels costive, rumination ceases or is slightly performed, eyes weeping, pulse quickened.

Second Stage.—The appetite entirely gone, nose dry and hot, and which commences to discharge thick mucus, which also now takes place from the eyes; purging commences; lining membrane of the eyelids of a dark red colour; pulse quick and small.

Third Stage.—Generally lying down from weakness, purging violent, very offensive, mixed with slimy mucus and blood, is passed frequently in small quantities, and attended with straining. The eyes become sunk, the countenance anxious, general restlessness, partial insensibility and death. In this stage the pulse is generally imperceptible or extremely quick and small.

Post-mortem examination shows the abomasum or last compartment of the stomach, and portions of the bowels inflamed; attended some times with slight effusion or dropsy; this is the general uppearance, and the exceptional cases and changes are not necessary to mention.

Treatment.

From the great tendency to run into a low typhoid type, and accompanied as it almost always is in the latter stages with violent debilitating purgation, and at some seasons of the year with a number of open discharging pustules, it is absolutely necessary that great care and moderation be observed in the administration of any medicinal agent, which might, and assuredly would if largely given, produce the very results which it is desirable to avoid.

It should always be borne in mind that our main object is to support the strength, and assist the curative powers of nature through an attack that generally lasts from seven to ten and even fourteen days, during which time the patient partakes of little or no food.

The bowels being costive early in the disease, a mild laxative may be given, and to avoid the slightest chance of too much action it is safer to give small repeated doses; which end I think I have best obtained by administering two or three ounces of finely powdered sulphur in two quarts of gruel morning and evening, until some slight effect is observable.

As this is an inflammatory disease, the sedative and narcotic class of medicines are most appropriate. Of those easily procured in the bazaars, and with which I have been most successful, the following may be given morning and evening:—

Camphor	2 drachms.
Nitre	2 do.
Datoora	1 do.
Cherayta	2 do.
Arrack	4 ounces.

Dissolve the camphor in the arrack, carefully powder and mix the other ingredients, then add two quarts of gruel, and carefully pour it down the throat with a drenching horn.

When the diarrhœa commences it is not desirable to attempt suddenly to arrest it, as it is an effort of nature to relieve the system, but if allowed to go on to any large amount the debility produced would impede recovery, so that after it has existed about twenty-four hours, the following finely powdered may be added to the preceding prescription:—

Opium	1 drachm.
Catechu	3 drachms.

The pustules, which at certain seasons appear, should be carefully washed twice a day, and the simple mixture consisting of camphor dissolved in oil

should be applied twice a day to prevent a deposit of flies' eggs, and the generation of maggots; further applications will generally be found unnecessary, and they will become healthy as the internal disease subsides.

As soon as there are symptoms of improvement, the medicines should be diminished or discontinued, as the recovery is generally very rapid, and requires nothing beyond supporting the strength with gruel, to which may be added the dose of arrack in extreme weakness. As soon as the animal shows the slightest inclination for food, he should be frequently supplied with small quantities of green grass, raggy, sugar-cane, or cholum.

The following is the proper method of making gruel:—One pound of Jonna, or any other wholesome grain, should be ground to a fine meal, and this meal be gradually mixed in two quarts of boiling water; to be given when cold.

In administering a drench, should the operation cause the animal to cough, the head should be immediately released, and no attempt made to continue giving the remedy for a few minutes; persistence in pouring down the draught at such a time would probably result in the suffocation of the animal.

Owners of cattle cannot be too strongly impressed with the necessity of separating any animal showing symptoms of this disease from their healthy cattle. The disease unquestionably spreads through the village herd by contagion, and by strict isolation of diseased cattle, the spread of it may be greatly prevented. Murrain is so formidable a malady that under the most careful treatment there must be many fatal cases, and the Ryots should never forget that prevention is better than cure.

It is most desirable that in any building where diseased cattle have been, the walls should be white-washed and the floors cow-dunged to make it safe for the use of healthy animals.

(Signed) J. Thacker, Veterinary Surgeon.

1. Ordered to be submitted to Government with the Board's recommendation that Mr. Minchin's proposals in the last paragraph of his letter for Mr. Thacker's remuneration be sanctioned.

2. The result of the inquiry and treatment of the disease must be deemed very satisfactory, as warranting the belief that this serious evil can be controlled with comparative ease; but the Board concur in the opinion that legislative action is necessary to compel the owners of diseased cattle to take reasonable precautions against injuring their neighbours.'

3. They leave the point for the consideration of Government.

(True Copies and Extract.)

(Signed) W. HUDLESTON, *Secretary.*

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 776, vol. xxxviii).

Having in my last communication briefly described the botanical and other characters of the natural order *Cucurbitaceæ*, we will now bring under notice the only plant belonging to it of special interest to the veterinary surgeon, viz.:—

"*Bryonia dioica* (*White Bryony*).—*Leaves* cordate, palmate,

five-lobed, toothed, with callous asperities; the terminal lobe longer. *Flowers* dicœcious, in racemose corymbs. *Petals* scarcely cohering at the base. *Calyx* five-toothed. *Stamens* in three parcels. *Styles* trifid. *Fruit* succulent, with small, ovate, compressed seeds, which are more or less bordered. *Tendrils* simple. *Root* large, fleshy; an acrid poison."—(*Lindley.*)

The *Bryonia dioica* is the only species which grows wild in this country; many others have been introduced from different parts of the world, and about forty scientifically described. It is a perennial plant, found growing in considerable abundance on dry banks and under hedges and thickets in many parts of this country. It somewhat resembles the vine in the manner in which its tendrils climb round bushes and trees, which often extend from ten to twelve feet. Its leaves, which are large and rough, are placed alternately on long hairy foot-stalks. Its flowers, which appear from May to September, are small, and of a yellowish-green colour. The male and female flowers are situated on different plants, hence the name *dioica,* signifying literally two dwellings. Impregnation is, therefore, probably brought about by bees and other insects. The fruit, when ripe, consists of clusters of berries of a bright red colour, containing numerous seeds, and a fetid, somewhat acrid juice. The root, which is of a pale yellow colour, is large and tapering, being in some instances nearly a foot in circumference, and, when freshly taken out of the ground in spring, abounds with a thin milky juice, possessing an unpleasant smell and a nauseous, acrid, bitter taste. The *white bryony* has been recognised as a medicinal agent from a very early period, and even at the present day is in great repute amongst herbalists and quacks, by whom it is not unfrequently sold under the name of *mandrake.* In reference to the latter, it is said, "impostors in former times forced the growing roots of this plant into the human shape, carried them about the country, and exhibited them to the staring credulity of the common people under the name of *mandrakes.* To achieve this purpose, they selected a thriving young plant, carefully opened the soil all round it without disturbing its lower fibres, cautiously adjusted to the root a mould used for making plastic figures, fastened this with a wire to keep it in its place, and then filled back the soil and left the root to grow to the shape of the mould; and when they performed this process in March they usually found the root as they wished it in September." Pereira says, "the fresh root of *Bryonia dioica* is sold by herbalists under the name of *white bryony* and *mandrake root.*

Fashioned into the rude representation of the human figure, I have seen it exhibited at a herb-shop as a sign. Bryony root contains a peculiar bitter matter, called *bryonin*. The root operates as a violent emetic and purgative. I have seen one case of poisoning by it. The symptoms were those of cholera."

It is the root of the bryony which is generally brought under our notice, from its being mixed with the food of the horse by the attendant, with a mistaken view of improving the condition of the animal. These cases not unfrequently occur, and may result in magisterial or other investigation, in which the evidence of the veterinary surgeon is required. It therefore becomes of some importance to be able to recognise the plant, and also to distinguish between the *white* and *black bryony*, both of which grow plentifully in many districts, the roots of each being employed for the same purpose. The following characters will enable us to distinguish the two plants. The *White Bryony* (*Bryonia dioica*) is classed amongst exogenous, while the *Black Bryony* (*Tamus communis*) belongs to the class of endogenous, plants; therefore, each plant will possess the leading characters which distinguish these two great classes of the Linnæan system. Both plants possess a similar vine-like habit of growth, but the leaves of the *white bryony* will be found large, hairy, and palmated, while those of the black are small, heart-shaped, pointed and smooth, of a shiny green colour. The root (and this is the part generally mixed with the animal's food) of the *white bryony* is of a pale yellow colour, thick, fleshy, and tapering, in some respects resembling the parsnip, while the root of the *black bryony* is of a blackish-brown colour externally, and is found in irregular, nodulated pieces. The taste and odour of each are similar; rather more acrid, perhaps, in the *black bryony*. The *black bryony* will again be noticed when describing the endogenous plants. A case is recorded of the injurious effects of the *white bryony* on some horses by Mr. J. E. King, in the *Veterinarian* for June, 1855, in which hæmaturia was produced by it. He says, "I have lately had some very interesting cases of hæmorrhage from the kidneys among some horses, five in number, belonging to a farmer in this neighbourhood. I examined their food, water, &c., but could not detect anything to account for their illness. On making further search I found in the stable some *white bryony* root; and, upon inquiry, I ascertained that the carter had, during the two past weeks, been giving large quantities of this agent to the horses to improve their condition. I have no doubt that this was the cause of the

hæmaturia. I am happy to say they all recovered but one, an aged mare, which continued ill longer than the others, her liver appearing to suffer as well as her kidneys."

(*To be continued.*)

CÆSAREAN OPERATION IN A BITCH.

By Messrs. Brooks & Whitworth, M.R.C.V.S., Grantham.

The subject was a fox terrier bitch, the property of — Norris, Esq., Adjutant of the Royal South Lincoln Militia. The animal had the misfortune to be run over and her femur fractured, when a veterinary surgeon was consulted, who ordered her to be destroyed. The owner, not admiring this advice, determined to give her a chance on account of her many good qualities, and left the case for nature to amend. Ultimately, the animal was restored to her former state of health, although her infirmities were very apparent. However, some few months afterwards she became pregnant, and unfortunately was again run over while fighting with another bitch, the wheel of the vehicle passing in an oblique direction from the lumbar to the region of the sacrum, which so disabled her that veterinary aid was expedient, she being in great pain, and could not support herself on her hind extremities. We were consulted consequently. We gave her an aperient, ordered hot fomentations, with lotio arnica to be applied to the part affected. By these means, together with good nursing, the bitch was supported up to her time for pupping; but the loss of nervous power was not restored to her hind extremities.

On the sixty-fourth day she showed symptoms of labour, when we were again consulted. On our arrival we found the bitch labouring in pain; ordered her a warm bath, and promised to see her again in a few hours.

On visiting her the second time she appeared as before, still labouring in pain, but could not pup. This induced an examination *per vaginam*, concluding that a wrong presentation, or some result of the injuries received when run over, might account for this impediment.

On passing up the finger the pelvis was discovered to be fractured just above the symphysis pubis, and the calibre of the pelvic cavity much interfered with, it being transversely narrower and vertically longer, and so much altered in form that it was with difficulty the finger was passed into the

pelvic cavity. On this occasion our employer was informed the bitch must die, as she could not accomplish parturition; but we advised him to allow us to have recourse to the Cæsarean operation, which he consented to, as he had another bitch which had pupped about four days previously, and could take the pups from this favorite bitch, as the drain upon the system by the sucking of pups would not be admissible after such an operation. On the evening of the 15th November the bitch was put under the influence of chloroform; the hair being removed where the knife had to be applied, an incision was made through the external skin, abdominal muscles, and peritoneum, in the right iliac region, which being explored, a longitudinal incision was made in the uterus and two pups removed, all she had. We put the same on to the other bitch, closed the incision in the uterus with a silver suture wire, leaving the ends thereof long, so that they could be removed from the abdominal cavity, then brought the peritoneal surfaces together by suture, also the abdominal muscles and external skin; had her sponged over, when she shook herself. We then gave her a stimulant, which treatment was continued, together with fomentations, for a few days, when her appetite was restored, and also the health of the bitch. By the 4th of December the external wound had united, and she was sent from our infirmary perfectly recovered from the operation, and could support her hind extremities and travel.

It may be as well to observe that the pups are alive and doing equally as well as the mother, which is now looked upon as a living curiosity. Her surviving an operation so formidable is the sole cause of our recording it.

THE PROPOSED NEW VETERINARY MEDICAL BILL.

By H. Cutting, M.R.C.V.S., Market Rasen.

Gentlemen,—I was truly glad to see the subject of the proposed new Veterinary Act taken up in the pages of your Journal, at the close of the last volume. I had purposed inserting a few remarks in the same issue, but, although prevented, I had full confidence the question would not lack ventilation through my silence.

The great body of country practitioners cannot but echo, and that cordially, the sentiments expressed in Mr. Gregory's

letter, though unfortunately we lack, at the present, the means of making known through your prospective "conference or congress," Messrs. Editors, our wishes in this matter. I hail with delight the approach thus made to a state of perfection; but just at this moment, like unto political reform, the franchise needs extension. Haste, happy day!

Meanwhile I hold there is a vital question of deep importance as affecting our profession, which demands immediate notice. The fourth clause of the proposed Bill, in my opinion, will perpetrate, if carried, an act of lasting injury and injustice, not only to the existing body of authorised veterinary surgeons, but also to successive batches of newly fledged members of the profession as they emerge for some little time to come from *alma mater*. For is it not most probable, as Mr. Gregory intimates, that numbers beyond the few deserving ones will steal into our enclosure before the fence is up? so that not only the established vets., but the coming ones from the different colleges, will find, on commencing business, a vast shoal of whited sepulchres, legally stamped veterinary surgeons, men, perhaps, but a few years their seniors, to contend against through life.

As things are, it is no matter if a few do dub themselves as a genuine article; they cannot face the test before an inquiring public or a county court judge. *As things will be*, in the event of the Bill passing, the M.R.C.V.S. will be for all practical purposes useless. There will only be two possibilities—a veterinary surgeon or not; the Act in existence, *the former* (whether M.R.C.V.S., or ex-groom, or what not) all merged in one, and standing on the same legal level; *the latter* only the non-recognised.

What a reflection upon the common-sense and discernment of the British House of Commons to suppose that, in order to propitiate their favour, such a suicidal sacrifice must be made by us! I have long thought that, when a step was taken to protect the profession, some must and should be admitted already in practice, but never did I conceive so loose a clause would be introduced as that contemplated. Not only do I think each claimant for the honour should undergo a practical examination and pay a fee, but also receive a certificate to that effect, such document being the future sign and token of his admission; also that the examiners appointed should have a certain rule to guide them in their selection of candidates; for instance, let men of ten years' standing and upwards be the only persons eligible. It would be no hardship or injustice to the rest to refuse them; they deliberately chose their path in life, conscious

they had no claim to the title of veterinary surgeon; the door was as wide open for them through the collegiate portals as for us; then why should such a measure be passed as actually and positively to benefit, in this our day, a race of aliens and encroachers more than they who only should be considered?

This communication, if accepted and allowed by you, comes before the profession close upon the eve of another Parliamentary session, during which the Bill is to be brought on. The general body of country veterinary surgeons have no means of meeting, and, as one man, recording their objections to the measure. We, unfortunately for ourselves, are as yet like so many independent atoms. What course can we, shall we, adopt to express freely and at once our views? I recommend the following:—Let each one of us during the first week in January next address the Secretary of the Council, at 10, Red Lion Square, expressing our individual protest against the proceeding with a measure so baneful in its tendencies, with a request that he would at once call the attention of the Council to the step we shall have taken.

I could still further write; but lest the length of the letter should supply you with a somewhat reasonable excuse for its rejection, I adopt the pithy curtness of the Indian, and say, "I have spoken,"

Remaining respectfully yours, &c.

To the Editors of 'The Veterinarian.'

DIFFUSED FALSE ANEURISM IN A MARE.

By W. Jackson, Veterinary Student, Sheffield.

The following brief history of a patient recently placed under the care of Mr. Cartledge may, perhaps, be thought sufficiently interesting for the pages of the *Veterinarian*. To me it presented features of great interest, and I believe it to be a case of not frequent occurrence. It may, perhaps, be described as one of diffused false aneurism.

A few weeks since, we were requested to attend a mare which was unable to proceed on her journey, and was, consequently, left a distance of four miles from Sheffield. She was four years old, the property of a gentleman who had bred her, and she had not done any work, except in being "broken in."

The owner had driven her to a place about eleven miles distant. On returning she was observed to stumble, and

immediately afterwards to go lame. The groom got down, thinking she had a stone in her foot; but such was not the case. On attempting to proceed it was with difficulty the animal kept from falling, and she showed evident signs of fainting.

With assistance she was taken out of harness, when a large swelling was observed underneath the collar, on the near side, midway between the point of the shoulder and withers, and which rapidly increased in size. The swelling gradually extended downwards between the fore legs, along the inferior part of the thorax, and behind the shoulder, the whole presenting an unusually voluminous appearance.

With men to support her on either side, she was walked to a neighbouring stable, and our assistance at once sought.

On Mr. Cartledge's arrival he found the mare extremely weak, pulse fluttering and almost imperceptible, visible mucous membranes blanched, extremities cold, and on manipulating the swelling a distinct pulsation in it was detected, anterior to the sternum.

These symptoms led Mr. Cartledge to the conclusion that one of the large blood-vessels in the neighbourhood had ruptured, and the swelling arose from the infiltration of the blood into the cellular tissue of the adjacent parts.

From the size of the swelling the sac could not have contained less than two gallons of blood. Mr. Cartledge considered the case to be hopeless.

I saw the mare a few hours afterwards, and from Mr. Cartledge's account I thought her better. She had in a great measure recovered from the shock the sudden loss of blood had caused, and although effusion was still taking place, as was evident from the now gradual increase in the size of the swelling, the mare had assumed a more favorable appearance, and there existed no symptoms of syncope.

We attended her for some days, and she continued to improve in her general health; but the swelling increased in size, extending, by the end of the third day, nearly to the teats, and in parts it had become hard from coagulation of its contents.

Although from the first no hopes were entertained of the animal's recovery, so far as to be again serviceable, she was allowed to live for the purpose of ascertaining the probable termination. It was clear that death would not speedily have taken place, as, although the increase in the size of the swelling was observable daily, the mare gained strength, fed well, rested, and in other respects did well. Our only expectation was, that the escaped blood might in time have been

removed by absorption; but then the lesion, or lesions, would remain, and it was thought that any renewed effort would bring about the same occurrence.

The mare was destroyed ten days after the accident, and we made a *post-mortem* examination of her.

On cutting into the sac large clots of coagulated blood presented themselves, together with a quantity of serum. Tracing the course of the clots as they were removed, we discovered a rupture to exist in the common carotid artery, at a point of about two inches before its entrance into the thorax.

To me it seemed remarkable that from so slight a cause as a stumble the coats of the artery should have given way.

Although no evidence of the kind presented itself during our dissection (owing to the change the parts had undergone), is it not probable that the artery was in a state of disease, or its coats attenuated?

Facts and Observations.

AN EXTRAORDINARY CAUSE OF OBSTRUCTION IN A HORSE'S BOWELS.—IMPORTANCE OF EXAMINATION PER RECTUM.—By THOMAS GREAVES, M.R.C.V.S.—A few days ago a valuable lurry horse, the property of Messrs. Carver and Co., of this city, exhibited abdominal pains as he was returning from his work. For nearly three days his sufferings were excruciating, and without one moment's intermission. All remedial measures were unavailing, and it was apparent that he must inevitably have sunk in a few hours unless relieved. At this juncture, as Mr. Greaves, veterinary surgeon, was carefully exploring his bowels at the stretch of his arm, the tips of his fingers came into contact with a strange substance. On tearing away a small portion it was found to consist of a fibrous material, and the substance was so firmly impacted in the bowel that it took him twenty minutes of gentle persistent effort before he succeeded in firmly grasping this foreign body; it required both hands to bring it within sight, and then, with the aid of the head horsekeeper, it was successfully extracted. It consisted of a considerable strip of coarse nail bagging, partly masticated, and densely impacted in feculent matter. It was fourteen inches in length, twelve inches in circumference, and weighed two and a half pounds. The grateful feelings ex-

pressed in the face of the suffering animal were apparent to all around him, and indicated the great relief he experienced. Although the pains subsided from that moment, the constitutional disturbance was so serious as to require the greatest possible after-care. For fourteen days he was in a most critical state; for six days he ate next to nothing, and his pulse marked over 100 beats in the minute; and during the next six days ranged about 80. The standard in health is 40. He is now entirely recovered. Taken as a whole, this case stands without a parallel.—*Manchester Courier.*

Delicate Test for Sulphur.—Dr. Noad states that the presence of sulphur in hops, wines, silk, &c., may be easily detected by means of the nitro-prusside of sodium. His plan is as follows:—The substance to be examined is placed in a flask with a piece of sheet zinc· diluted hydrochloric acid is poured over it, and the gas disengaged conducted into a solution of the nitro-prusside. If the gas contain but a minim of sulphuretted hydrogen the first bubble causes a violet cloud in the solution, and after passing the gas for a short time it assumes the magnificent colour of a solution of the permanganate of potassa.

Preservation of Iron.—Despite all the means devised to prevent it, iron is found quickly to undergo oxidation, and that even under the coating intended to exclude the atmosphere. It has, however, been lately found that the combination of phosphorus with the surface of iron, at a high temperature, will completely preserve it. The coating of phosphate of iron thus produced is a very stable compound, and one not acted upon by those agents which usually produce so mischievous an effect on iron.

Distinction between Atoms and Molecules.—Mr. Albert Bernays states the atom is the smallest particle in a compound incapable of separate existence; the molecule, the smallest quantity of an element in a separate state, and it must consist of at least two atoms.

Iron in the Blood.—M. Pelange gives a table of the amount of iron in 100 grammes of the blood of various animals, and, by way of summary, states that, if he is correct, there are from 3 to 4 parts of iron in 1000 parts of the blood of birds, and from 5 to 6 parts in the blood of mammals.

Amount of Carbonic Acid expired by Leaves.—M. Bousingault has, by experiment, ascertained that for an

equal extent of surface, and in an equal space of time, a leaf decomposes much more carbonic acid in the light than in the dark. Thus, leaves placed in carbonic acid in sunlight produce, in the end, a respirable atmosphere. But in darkness, after a time, they lose the power of decomposing carbonic acid; and although they remain green, and are to all appearance healthy, they are dead. Their death, he says, must be attributed to the absence of oxygen, the presence of which is indispensable to the elaboration of carbonic acid by slow combustion or respiration; in fact, they die asphyxiated. He adds, nothing of the sort happens when leaves are kept secluded in a respirable atmosphere; in this they preserve their vitality, and the same leaf will alternately produce oxygen in the presence of carbonic acid and carbonic acid in the presence of oxygen.

Allotropic Forms of Iron.—It has been generally thought that the different oxides of iron result from different degrees of oxidation of one metal, and all the differences found in the products of iron have been consequently attributed to differences in chemical composition, these products being cast iron, sheet and wrought iron, according to the amount of carbon in combination. Such appears not really to be the case, but that iron exists in two allotropic conditions. Berzelius, indeed, has classified the different combinations of iron by connecting them with two chemically distinct metals, to which he has given the names of *Ferrosum* and *Ferricum*.

Ferrosum is the metal contained in the ores of the protoxide of iron, and exists in the state of white cast iron; its physical characteristics, when combined with carbon, being hardness and fragility. It changes readily to ferricum, and, from its chemical properties, should be ranked among the bodies which combine with a single atom of oxygen.

Ferricum is the metal of anhydrous peroxide ores, and its metallic type is the iron obtained from these ores. It gives malleable iron, and, as an ultimate form, blistered iron. When alone, it cannot pass to the state of steel any more than to white iron. It should be classed, chemically, among bodies which combine with at least three atoms of oxygen.

The magnetic oxide ores contain the two irons in atomic proportions, and these give the most stable and perfect steels.

Treatment of the Cattle Plague with Alkaline Sulphites.—We are glad to find, says the editor of the *Chemical News*, that the treatment we recommended when the presence of the cattle plague in England was first made

public has been adopted with some success—at all events, as a prophylactic measure. A correspondent writes to the *Daily Review* that all the animals dosed with sulphites before an attack recovered, while all those not dosed died. We learn from wholesale chemists that the sulphites are just now in great demand, and we hope they will have extensive trials.

Antidotes for Prussic Acid.—Messrs. T. and H. Smith, in the *Pharmaceutical Journal,* give the following antidote for prussic acid, believing themselves justified in so doing;—Make into a smooth paste, with water, from one to two drachms of calcined magnesia. Give the emulsion to the patient, and then give, in water, a solution of sixteen minims of perchloride of iron, and twelve and a half grains of green vitriol. Should it be supposed that so much as forty minims of medicinal prussic acid has been taken, of course four times the quantity of the iron compound necessary for 100 minims should be given, but without altering the quantity of the magnesia.

Respiration of Fruits.—M. Cahours has recently investigated the respiration of fruits, deeming it an important part of the physiology of vegetation; and he finds that ripe apples, oranges, and lemons respire by consuming a portion of the oxygen of the atmosphere in which they are placed, and giving off an equivalent quantity of carbonic acid. Darkness diminishes, and diffused light increases, the amount of carbonic acid, and it varies with alterations of temperature. But when once decomposition sets in, the quantity of carbonic acid is rapidly increased.

Effect of Ozone on Seeds and Plants.—An American experimentalist, Mr. Carey Lea, has tried the effect of ozone on growing plants with remarkable results. In an atmosphere of ozone seeds do not become mouldy, as seeds in an ordinary atmosphere, tried for comparison, do. At first the germination appeared to be more rapid in the ozone than in the other; but the rootlets, instead of striking downwards, all turned upwards, and became pink at their extremities. This phenomenon continued, and the young plants were much smaller than those in the natural atmosphere. On the twelfth day the experiment terminated, the wheat-plants in the ozone being four inches high, with very small roots; in the other ten inches high, and with roots of the usual length. Ozone, therefore, is unfavorable to vegetation; but it prevents the mouldiness of seeds sown on water or in a damp place.

THE VETERINARIAN, JANUARY 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ANNUAL ADDRESS OF THE EDITORS.

"Farewell, Old Year; a length of pictured days
Thou foldest up; thy service is at end."

"Another year has fled,
Gathered to the ages gone;
Numbered now among the dead,
Which we sadly look upon."

SINCERELY do we wish our readers a Happy New Year. It has been well said, "One of the advantages of our artificial division of time is, that it brings us the opportunity and the temptation to review our position, and also to anticipate our prospects and duties. We measure our work off into lengths, and so are better able to alter and improve its quality. In many things our force, if exercised continuously and for long, is apt to spend itself, and our momentum to decline; and so, instead of its being a disadvantage, it becomes a positive advantage, to break off and begin again. We pass the shears across the fabric, readjust the loom, alter the quality of warp or woof, to meet the altered necessity of the time, and then begin again." "Better," says Solomon, "is the end of a thing than the beginning." Nevertheless, we have now to do with both, having to pass in review what has been done by us during the past year, and, as far as able, look forward with anticipation to the future, although its events lie deep hidden in the womb of fate, and are to us as yet unknown. Neither must we let the historic past divorce us from the busy present. A Mahometan proverb has it, that to-day is worth all the past, and half the future; and certain it is the present is all that we can call our own, and this almost as soon as gained is gone. As it respects the future, the veil covering which is too heavy for us to lift, too dark to penetrate, most persons are so busy about it that they

"leave the dead past to bury its dead." So would not we. We like the recurrence of these annual addresses. They enable us to take a retrospect, and, like milestones in a journey, they tell us how far we have gone, and what advancement has been made by us; they likewise afford us grounds for thankfulness, and inspire us with hope and confidence for the future, whilst they urge us to increased energy and perseverance. Of course, much of this will depend upon the nature of the retrospect, whether it be painful or pleasing. Now, it is our good fortune to be able to look back upon the past year with pleasure. At its commencement the support we experienced was marked, and so great that even the first number of the Journal had to be increased in size, which we were obliged to do again and again, and at length were compelled to issue afterwards double numbers, such was the large amount of matter forwarded to us for publication. To our contributors, therefore, whether regular or occasional correspondents, our acknowledgments are at the outset heartily given. Fain would we have avoided these double numbers, not knowing what may be the feelings entertained respecting them; but really we had no choice. As it is, some sections of the Journal may have seemed to suffer, but our correspondents must share the blame with us, and we thank them that we have not been compelled to go to other sources for supply. It might, perhaps, be said that the unfortunate outbreak of the Cattle Plague has tended much to this. Doubtless the subject has of necessity occupied many of our pages, both in articles by ourselves on it and by others, and it would have been strange indeed had it been otherwise, even if it had not been a dereliction of duty. Still, we believe that our communications generally have not been lacking in either their usual interest or value. Of these it would be easy to select the more important ones for comment and commendation, but, where all have done so well, the selection might appear invidious, and as none have failed in their accustomed support we would rather deviate from our usual course, and reiterate our thanks to all, assured, as we are, that the kindness we have so long experienced will be

continued. Of this we feel the more confident, from the alteration that has been made in the conduction of the Journal having met with approval. Men who are in earnest are not satisfied with continuing in one beaten track, but, effecting some good, they aspire to do better whenever they see the way clear before them. Mere routine becomes to them tedious, and mental slavery. They feel themselves "cribbed, cabined, and confined," and seek some deviation. It is pleasant, nevertheless, to retrace steps profitably taken, and to recognise the good resulting from plans and proposals initiated by us, although at the first their success may have seemed dubious, and even beset with difficulties. But if a trial be not made there can be no exultation, and a difficulty is merely something to be overcome. Even controversy, fairly conducted, occasionally does good; the agitation caused by it proving like a thunderstorm to the atmosphere, which purifies and readjusts its constituents. Further, it is only at the termination of a period that a just review can be made, and the position in which we stand correctly ascertained, and, having arrived thus far, we feel convinced that the assistance hitherto accorded will not be withheld, since the advantages to be derived are mutual, and the object we have in view identical.

We have been no idle spectators of what has been going on amongst us, nor indifferent thereto, having willingly lent our aid to everything we believed to be conducive to the advancement of our common interests. We have seen the long dormancy of the profession changed into something like activity, its apathy into increased zeal; nevertheless, we do not yet witness that oneness and unity among its members which is so desirable, and without which no true harmony can exist. One cause of this is, as we believe, to be found in the absence of a perfect community of interests. All are not of the body corporate. We would that every one following the profession should be able to append to his name the letters M.R.C.V.S. Need we add that we most cordially approve of the application made to Parliament for a "Veterinary Medical Act," so as to enforce this, and that our support shall be given to it, *so far as we believe it to*

be for the interests of the profession, not, of course, pledging ourselves to details; for we feel that, until this is the case, we shall be but a disgregated mass, weak and easily assailed, since division is opposed to the principle of co-operation, and loss to the body necessarily follows, while unity is essential to its strength and utility. And this at the present time we hold to be in every sense desirable, since we believe that the profession is entering upon a new phase of its existence, a new era, which must be met with energy and the application of principles based on science, as these alone will bear the test of investigation. The public are daily being made conscious that the mere pretender to science, the empiric, is not to be relied upon, and that it is to the man of education they must look to meet the exigency, and to supply their wants, both in the maintenance of the health of the lower animals and in aiding nature in her restorative powers when they are diseased.

Shakespeare has told us, there is a tide which, taken at its flood, leads on to fortune. Let us hope that the wave of progress, as it ebbs and flows, will bear on its crest some rich proofs of our advancement, and lift us many degrees forward. Surely it is from the higher estimation in which we are now held as a body that agricultural societies are soliciting members of the profession to locate themselves in their immediate neighbourhoods, and guaranteeing to support them; that "qualified veterinary surgeons" are solicited to make application for official appointments in the different Cattle Assurance Associations which are being formed; that they are appointed inspectors both by Government and magistrates; and, above all, that the Government has found it absolutely necessary to extemporize a "Veterinary Department." Nor can we refrain from considering the formation of the different Provincial Veterinary Medical Associations other than a proof of progress. It was not thus a few years ago. We could not then have pointed to such events as these. The success that hitherto has attended the meetings of these societies will not only be accepted by their members as some reward for their labours, but also prove an incentive to still greater exertions, so as to render

them stable and efficient. It will to the members ever prove a sufficient reward for them to know that they have been instrumental in the general advancement of their profession; which could not fail to be the result when a right spirit actuated those who took the lead, and such we have seen to be the case. But our sentiments on this subject must be now pretty well known; yet we almost fear, from an observation or two we have made, that it may be thought we are not favorably inclined towards discussions following the reading of papers. So far are we from this, that we believe them to constitute the life and soul of these meetings. We would have them, too, conducted in full accordance with all well-regulated debates, and the usual amenities and courtesies ever manifested towards each other. We do not object to controversy; indeed, we believe it to be very often imperatively demanded; we only object to its being carried on in a dictatorial spirit, blended with personalities, and so much unfairness inferred into it that the angry retort is oftentimes aroused, and evil rather than good results. We would have all charity and forbearance exercised whenever differences of opinion exist. There is no doubt that by honest discussion many mistakes are brought to light and corrected, the object sought for by all being truth, as existing in the laws of nature—the end and object of science.

Again, we have to express satisfaction at the general absence of personalities in the communications received. No good whatever results from an indulgence in this spirit, the most effectual preservative against which is a well-cultivated mind. It has been rightly said, "The calumniator blasts his own being. Instead of thinking on the things which are honest, lovely, and of good report, he thinks on the things which are mean, shabby, and disreputable, and, grub-like, grows of the same substance and complexion with the fare he feeds on." In the exercise of our editorial privilege here, we may not always have given satisfaction. But would it not be well to remember the lines of Dryden?—

> "Forgiveness to the injured doth belong:
> They never pardon who have done the wrong."

What we allow to others we take ourselves—free expression of opinion. Again and again we have stated we have no belief in uniformity or oneness of views. 'Tis altogether Utopian. We would have diversity, but withal substantial unity, believing such to be conducive to onward progress. Above all, let us have harmony, which is made up of a diversity of sounds, yet all blending in unison.

"Each has his gift.
Our souls are organ-pipes of diverse stop
And various pitch: each with its proper notes
Thrilling the self-same breath of God;
Though poor alone, yet joined they're harmony."

A few collisions and rubbings may, perhaps, do good, by lessening our asperities, for as we become better acquainted with each other, we shall be led to perceive that the object in view is the same, although different methods are adopted for its attainment; we shall also learn to bear with each other's peculiarities, although we do not always see things eye to eye. The sciences are the handmaidens to truth, auxiliary force to its influence and power; the means by which we are enabled to perceive some few glimpses of the light, although for the present we only see as through a darkened glass. By and by this will become clearer, and then, the veil being lifted, more distinctly will the wisdom and power of the Great Designer be displayed. There is no questioning the fact that the present generation stands on the threshold of mighty events, to be effected by the progress of science. The wheels have been set in motion, and cannot be stopped, nor is it desirable that they should be. Let it be ours to keep pace with them.

Fully do we concur with the observation—"Let no one ever imagine that through study of the laws of nature life can ever be robbed of the poetry of its mystery. For, on the contrary, every puny advance achieved by man's feeble intellect only serves to reveal a further expanse of unfathomable wonder. The prying soul cowers like an affrighted bird when launched upon the field of speculation opened by the study of these laws, and, towering for a while, at length shrinks back, overwhelmed by the sense of its

own insufficiency; while the reflective mind becomes lost in admiration at the marvellous ways of God, in disposing the materials and powers of the world."

Thus have we chronicled the doings of the past year. In like manner, as we have hitherto done, we shall continue to concentrate our efforts for the coming one, not for a moment doubting, as we have already said, the co-operation of those with and for whom we have so long laboured. Our success is mainly referable to their support, for had it been withheld we must have long since failed. It is this which in part has made us strong and still able to labour, for we do not forget whence our strength and abilities come.

And now that the sword has once more been returned to its scabbard, and man no longer, and for glory, so-called, at the dictum of others, slays his fellow-man; now that wars have ceased and the temple of Janus is shut, it may be confidently hoped that Science, hand-in-hand with Commerce, will pursue their unrestricted course, contributing to the happiness of mankind.

Heartily do we concur with the observation that "War, make the best of it you can, is a very bloodthirsty and unmannerly business. The most 'glorious' of campaigns is a barbarous, wicked, and unchristian deed. The most magnanimous conqueror, in the justest of quarrels, must trample on the Bible, and violate a hundred statutes of the Divine law, when he draws his sword. Fifing and drumming, banner-waving and cross distributing apart, it is but to the god of murder that we erect triumphal arches."

While we eschew general politics, as not within our province, nevertheless, having rejoiced at the cessation of war, and being advocates for liberty and freedom, we would record our gratification that the last fratricidal war in America has led to the cessation of that debasing custom the possession of slaves, which gave to man that to which he had no right, property in the blood and sinews of his fellow-men; by which both mind and body were stunted, and slaves became a mere machine for their masters' aggrandisement. Eloquently has it been said by one, "We have lived to see the end of the slave-trade in modern Europe,

we have lived to see the end of colonial bondage in connection with our own history; we have lived to see the reproach of serfdom wiped off from the soil of Europe by the present Emperor of all the Russias, and now we stand on that southern territory, in order to wipe out that foul stain from the world, and are privileged to see the last link of the chain of the last slave struck off." Surely this is the sublimest act of homage that man has ever rendered to the eternal law of right.

During the past year death has removed very many of our members from among us. Never, indeed, has our obituary been so large. The word death trembles on the tongue, and awakens in most persons a degree of fear, which may or may not be justifiable. "And what is death? Who shall tell us what death is? We know how to define it as being the dissolution of soul and body; the snapping in twain of the twofold cord, the material body and the immaterial soul, which is our link to the living; the departure of that soul, the presence of which is life, from the house of this tabernacle, and the dropping down of the dead weight of the body upon the earth, from which it was taken." But here is not the whole of being. Truly has it been said, with the New Year's dawn begins death's dread progress, and the harvest of the Great Reaper extends throughout the year.

"Leaves have their time to fall,
And flowers to wither, at the north wind's blast,
And stars to set—but all,
Thou hast all seasons for thine own, O Death!"

ON CRUELTY TO ANIMALS.

The Wise Man has told us that "a merciful man is merciful to his beast;" and how a being made in the similitude of God, and among His noblest works, can ill-use those animals that are placed lower in the scale of creation than himself, has always been to us a matter of surprise, did we

not know what human nature is capable of when left to itself, and the unbridled passions are let loose. Justly does cruelty to animals demand censure and the severest penalties the law can inflict, and we are glad to be able to state that very decided and impartial has been the conduct of the magistrates whenever cases of this kind have been brought before them, and that even to the fining of one of themselves. A magistrate at Uckfield, who had presided at a meeting of magistrates, changed his place on the bench for the defendant's dock, and was convicted for driving a horse with abraded wounds on him, caused by the harness. These were unobserved, and consequently the pain inflicted on the animal was unintentional.

While we feel a degree of gratification at the success of the *Society for the Prevention of Cruelty to Animals*, in almost always obtaining verdicts in their favour, our pleasure has been considerably enhanced by knowing that to a member of our profession, Mr. G. Fleming, of the Royal Artillery, it last year awarded its first prize. In a sermon lately preached at the Chapel Royal by the Dean of Westminster, in behalf of this Society, he said—

"The lower animals have an origin common with man. At the present day, when science is discovering to us the mysteries of creation, it might be urged that the descriptions of the sacred historian are not exact, and should not be taken literally; and no doubt this to an extent is correct, for the Bible does not teach science, but it enunciates everlasting moral truths. All the speculations and discoveries of the past or future, however, could not change the truth and beauty of the record, that man and brute were alike made of the dust of the earth; nor could the claims of the inferior animal to the protection of the superior be lowered by any such progress in knowledge." Besides a common origin, the preacher traced in many of those dumb creatures—the parrot, the ape, the jackal, the tiger, and the serpent—a likeness to man in his baser conditions; for though the human being has a higher nature, it is only when it is cultivated that his superiority can be acknowledged. It was man's business to classify, to name, to govern, and seek companionship with animals, and to inspire them with some of his own attributes. Noxious animals have gradually disappeared before the

advance of beings of higher nature; but others have been tamed, improved, made docile and gentle, and now look instinctively to man as their best friend just in proportion as they are admitted to human fellowship. Having alluded to their high instincts, he went on to consider that animals have the same infirmities as man, and are governed by similar laws. There is a great distance between them and ourselves, but the greater distance between God and man does not deprive us of the blessings of heaven; and should the same fact prevent us exercising the most considerate mercy to creatures so much lower than ourselves? If we are to them as gods, let us remember we have god-like duties towards them."

We might easily have filled our pages with instances of cruelty to animals, but we have been compelled to withhold them through press of other matter, ready as we are at all times to denounce them. We append a condensation of two cases, which occurred a short time since, than which we think few could be more disgraceful, and no language too strong to express our reprobation of such conduct, arising, unfortunately, from want of correct education.

The poorer classes of society exhibit in too many cases an indifference to brute suffering which is really marvellous. In Manchester, a few days since, an instance of barbarity was witnessed by a policeman and an officer of the Society for the Prevention of Cruelty to Animals, who immediately took steps for the punishment of the offenders. At a pork-butcher's one of the men was seen to walk into the midst of a number of pigs, thrust the hooked end of a rod of iron into the mouth of one of them, and, after getting a firm hold in the flesh, pull the poor animal to another part of the yard, where the butcher knocked it down with a pole-axe. The same man then seized another pig in like manner, and in this case the hook passed through one side of its head. This was not the animal which the butcher wanted, and it was, therefore, let loose and allowed to move about the yard bleeding. Two men were charged with thus cruelly ill-using the animals, and were fined £3 each, the bench stating that in any future case the offenders would be sent to prison without the option of a fine. An instance,

however, of barbarity far exceeding the former case was lately brought before the Middlesex Sessions. A horse was attached to a cart with a load which it could not move, and on the pretence that it was lazy the foreman of the works ordered one of the men to make a bar of iron red hot. This having been done, the rascal pulled the horse's tail aside, and deliberately thrust the iron into the body of the animal, and kept it there for upwards of a minute. The poor horse groaned and arched his back at this diabolical treatment, and it was taken to a Mr. Bowyer's for some days, but Mr. Stevens, a veterinary surgeon, seeing the great suffering of the poor animal, for the sake of humanity, advised that it should be immediately killed. The prisoner now begged for mercy, saying that he was in liquor at the time. This statement was, however, disproved, and the brute was sentenced, as he deserved to be, to five years' penal servitude.

Dean Ramsay has told us that there are three points of view under which acts of cruelty to the animal creation may be specially considered as a violation of the letter and spirit of Christian teaching. First, because we are bound to act kindly to all beings capable of feeling pain; second, because to the animal creation is applicable the great principle of grateful acknowledgment of services, or, putting the question on its widest basis, the great principle of rendering to others the same consideration which under similar circumstances we would expect from them; and third, because we are bound to show the same mercy to our inferiors in creation which we know we have ourselves received from beings who are *higher* in the scale. Cruelty to animals, therefore, becomes an offence against the great Christian law of mercy and kindness.

Again, are not the lower animals capable of enjoyment, and sensitive to harsh treatment? Their services are better and cheerfully rendered to man under acts of kindness, and resisted when severity is exercised; and does not man lose his dignity when he resorts to this?—when his bad passions cause him to forget that he is lord over the beast of the field, and has dominion over all living things that move upon

the earth? On a previous occasion we adverted to self-interest, as being an operating cause in the prevention of cruelty to animals, which, however, too often proves ineffectual. But how much do they contribute to his benefit? Need we point out the services of that noble creature, the horse, or the faithfulness of the dog, the almost companion of man? Well has it been said, "To abuse our power over creatures that have served us well and faithfully, and wantonly to torment and ill-use them, is, in fact, to incur the guilt of ingratitude, and to return evil for good." By so doing, man lowers himself beneath the brute he thus treats. His services he has a right to, nay, even his life he is entitled to take for sustenance, but he has no right to inflict unnecessary suffering during either the one or the other.

THE VETERINARY MUTUAL DEFENCE ASSOCIATION.

We cannot refrain from expressing our gratification at the formation of the above society, as stated in the communication received from Mr. T. Greaves, and to which we direct the attention of our readers.

For a long time such a society has been desiderated, and several propositions have been made for effecting its establishment, but until now they have all failed; therefore do we most sincerely rejoice at the success which has attended the deliberations of those who have been the instruments of accomplishing it, and offer them our hearty congratulations. We believe that such an association must be attended with great good to the profession, and consequently from them as a body it deserves the warmest support. Without this, of necessity it must come to nought. Formed, however, as it has been, by the leading members of the Veterinary Medical Associations in the North of England, acting as representatives of their respective societies, we cannot for a moment allow ourselves to entertain the thought of such a result taking place. It will only be required of them that, as they have so nobly

began in co-operation, so they will continue to act, carefully weighing each and every proposition made; thus placing the society on a firm and safe foundation, so that thereupon the superstructure may be firmly built. For this the work we believe to be in good hands.

While we have not hesitated to express our delight at the general proposition, there is a particular section which has awakened in us still greater gratification, namely, that it is intended that the funds of the society, when sufficient for the purpose, shall in part be appropriated to the relief of the widows and families of those members of the profession who have not been successful in practice. May they be few! But this is "hoping against hope," for in every association there will always be some who are less successful than others; and this not through any faults of their own, but from circumstances arising over which they had no control, such as losses in business, sicknesses, and many other causes. These tend to diminish the sources of success, and ultimately to leave the members in a state of comparative need, commendably "too proud to beg and too honest to steal." Towards such the helping hand may be consistently and kindly extended. We would echo all that Mr. Greaves had said on this subject, having some years since endeavoured to bring about the formation of a "Benevolent Society." But although a goodly amount of support was promised us, which would have been realised, it was not enough to ensure the permanency of the society, the attempt, therefore, at its formation was no longer continued. Now, however, that it has been taken up by others, and made by them to constitute an integral part of several bodies, acting in association, and who are thus pledged to its maintenance, no longer can any doubt exist on this head.

In the above admirable doings we surely see another proof of the advantages resulting from union, and of strength derived from co-operation; while at the same time they give an indubitable indication of our onward progress. But we have not yet done.

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

THE EFFECTS OF ABSTINENCE AND INSUFFICIENT ALIMENTATION ON ANIMALS.

By M. Colin, Professor at the Veterinary School, Alfort.

(*Continued from p.* 880, vol. xxxviii.)

Hippocrates, who personifies in so eminent a manner the genius of observers in ancient times, has accurately established the regulations of the diet and regimen to be observed in sickness. For instance, he notices man in health, and examines the hygienic basis of alimentation* in connection with the exercise of the body and work on the one hand, and he considers the malady on the other,† and tries to distinguish the cases in which diet is to be prescribed with more or less rigour. From the beginning he feels all the difficulties of this delicate task, and he shows the salient points in such a manner that they may be easily seized. The majority of the doctors of medicine, he says, are like unskilful pilots; so long as a calm prevails their unskilful steering of the vessel is not apparent, but a storm supervenes with a strong wind, and the ship is lost, and no one is at a loss to know that the cause of disaster is to be attributed to their clumsiness and ignorance. It is the same with the bad doctors, which form the greatest number. As long as they have to do with maladies of little gravity, where the grossest ignorance is of little consequence and causes no serious result, the vulgar do not perceive their mistakes; but when they have to treat a grave or violent and severe malady, then their false steps are visible and their inability manifest; and punishment of the faults of the pilot and the doctor are not long delayed—it follows at once.‡

He adds, if all strong diet were inconvenient, and weak diet capable of sustaining the healthy and the sick man, there would be no difficulty, for there would be no danger always to incline to the weaker alimentation; but one would thereby commit a fault, a fault not less injurious to the man than if he received an insufficient quantity of nutriment inadequate to his wants. Abstinence can do much in the human economy in weakening it, causing a malady, and even kill.§

* 'Du Régime,' lib. ii et iii; 'Œuvres Completes,' trad. par M. E. Litré, t. vi, pp. 228—637.

† 'Du Régime dans les Maladies Aigues,' t. ii, pp. 224—529.

‡ 'De l'ancienne Médecine,' t. i, p. 591. § Ibid., p. 589.

The father of medicine, guided by sound physiological views, reasoned always from what passed in the normal state. He was intent on keeping up the strength to combat the malady, since in his opinion the debilitating effects resulting from the privation of food may have consequences as fatal as those of the malady; nevertheless, he was not ignorant of the danger of overfeeding the patients. For him intemperate repletion has no less inconvenience than intemperate abstinence; his first object being to distinguish the case where the diet is suitable from that in which it is unnecessary, and those in which it would be dangerous. It is with remarkable tact that he establishes these distinctions. Modern science might multiply them, but cannot render them clearer or more exact. If one has to do with a violent and acute malady, accompanied with fever, it is urgent, he says, to prescribe a rigorous diet immediately,* and as long as the malady is in full activity this rigorous diet is to be enforced.† He returns to this precept again and again. This maxim is nothing worth when the malady is not acute, only when in its full intensity; of no value during the augmentation of the disease, nor when the consequences are to be feared. The physiological doctrine did not exact more. But when the malady is neither acute nor accompanied by great suffering, nor at its greatest intensity, then the severity of the diet should be lessened, and the more so as the malady tends less to generate into extremes. In many cases it will be expedient to order a diet which will merely sustain the strength of the patient. Before we regulate the degree of the diet we must calculate the probable duration of the disease; also, he says, examine the patient so as to estimate whether he will be able to support the diet up to the highest period of the malady, and which of the two alterations might happen, whether the patient becomes debilitated first and can no longer support the diet, or the malady yields first and becomes the weaker.‡ In other words, the doctor ought well to bear in mind that his patient is exposed to two causes of death, and endeavour to calculate their relative position. It is of great importance to foresee whether the malady will be cured before the diet may kill the patient, or whether the abstinence may not kill before the morbid affection has yielded either to the force of nature or the medical aid. The low diet, the extreme diet, the rigorous abstinence—he recognises the necessity of all in very acute affections,

* Aphorisme 7, 1re section.
† Aphorisme 8.
‡ 'Des humeurs,' t. v, p. 485.
§ Aphorisme 9, 1re section.

attended with violent febrile action. They seemed to frighten him. He knows how dangerous in itself diet is—dangerous principally in maladies of long duration; and he also knows that it is equally dangerous by the difficulty afterwards of repairing exhausted strength. He is therefore always disposed to relax the severity of the regimen. He always hesitates at the *début* of a malady in prescribing abstinence suddenly, for the sudden privation of aliment seems to him a cause of derangement and trouble in the animal economy afterwards. If he sees in the affections of long duration periods of calm and remission, he inclines then to the reparation of the strength. The principal thing to be observed in the regimen, during maladies of long duration, is the *exacerbations* and the remissions of the fever, in order to watch the time when food should not be given, and know when it might be given with safety.* When once the paroxysms of the malady are further between, the necessity of attention to diet is recognised, and its degree of exiguity determined. It is then necessary to avoid, with the greatest care, all deviations and errors in the regimen. They occasion, he says, under certain conditions, the death of the greatest number of patients, if they are committed at the moment of the greatest acuteness of the malady, unless the affection is very benign. But, he adds, the faults at the *début* of the disease are not so irreparable, the mistakes not so serious in the first place if the patient has not been deprived of food. It is more serious when committed after a few days of rigorous diet.† As soon as it is found necessary to make a change, it should be done with the greatest care, always taking into consideration the strength of the patient, the character of the malady, &c., inclining rather to an increase than to a retrenchment. The greatest care should be to avoid any sudden transition, since all sudden changes cause suffering and debility. They are also more detrimental when a change from a severe diet to a more liberal one takes place than the contrary. The alimentation which follows abstinence has often, as he remarks, most fatal consequences, of which he draws a lively picture. That which he never loses sight of is the strength of the patient, and he is intent on maintaining it. In this method he contrasts with that of the doctors whose greatest care seems to be to weaken the patient. It is important that particular care should be taken to well distinguish one malady from another, and the different

* 'Œuvres Completées (Du Régime dans les Maladies Aigues),' tome ii, p. 503.

† 'Du Règime dans les Maladies Aigues,' p. 305.

forms of debility, as they result from vacuity of the blood-vessels, the suffering, or the acuteness of the malady, as the death of the patient or his restoration to health may depend on the doctor having made these distinctions. No doubt, in a case where the debility depends on pain and the acuteness of the malady, it would be a great mistake to give a large quantity of food and drink, with the idea that the debility present is the result of the vacuity of the vessels; but it would also be a shame not to know when a patient is debilitated from inanition, and to aggravate it by a restricted diet.

Hippocrates, by indicating the principles* by which diet should be regulated, takes everything into account—the age, the constitution, the individual habits, and even the external circumstances. In this observation alone he is seen to be a safer guide than science, however consummate. With respect to age, he says that old age can resist abstinence better than adult, and adults better than children. The latter support it only with great difficulty, and particularly if they are of a very active disposition.† As to the seasons, he remarks that in summer and autumn alimentary matters are more intolerable‡ than in winter and the spring;§ therefore he recommends a liberal diet during the latter. He makes great allowance for habits, and orders two allowances of the decoction of barley to those who were accustomed to two meals a day.‖ When the malady is not grave the diet is to be regulated according to the quantity of food the patient was in the habit of taking, in order to avoid too great a depletion of the vessels.¶ On the other hand, he takes into account the fever and the frequency or rarity of the evacuations. If they are rare, the quantity of the decoction is to be reduced; if abundant, the quantity is to be increased in proportion.** For those who are accustomed to a humid regime he prescribes the same as for children and those who have fever. All this is logical, and in accordance with the results of observation. Nothing seems to escape his sagacity. He recognises all that conciliates, and all that is incompatible with abstinence. You must ask nothing, he says, from the subject who is deprived of aliments; repose is necessary to him; he requires the most perfect calm; he must be protected from all excitements, and kept in a semidark place, &c., &c.

* 'Du Régime,' p. 317.
† Aphorisme 13, premiere section.
‡ Aphorisme 18, id.
§ Aphorisme 15, id.
‖ 'Du Régime des Maladies Aigues,' p. 249.
¶ Ibid., p. 249.
** Ibid., p. 251.

After long-continued abstinence, the regime and returning convalescence must be regulated with the greatest caution. As a rule, no food should be given while fever exists. Aliments are often the malady in those who are smitten with fever; at any rate, they augment it.* In affections of the lungs and the pleura, aliments must not be given until a certain time after the acuteness of the attack has ceased.† The regulation of the transition is here of great importance. Restore gradually those in which the emaciation has been slow, and rapidly those in which the emaciation has been rapid.‡ Bear in mind that when the diet has been carried to its ultimate limits of attenuation, reparation is always difficult.§ These wise precepts are often forgotten. He points out with the greatest care the signs of convalescence, all indications of a good or bad augury, in order that the doctor may with prudence direct the diet. One can easily perceive that fears of a relapse and unfavorable changes, likewise of ameliorations which are not regular, are not to be trusted.‖ If a convalescent who takes his food remains languid, it is a sign that he partakes of too much,¶ and when he eats well and does not improve, is also an unfavorable sign.** Finally, after having taken a retrospective glance at the aliments in general, he passes them individually in review, and indicates their properties, in order that one may select with certainty those which are best adapted. He does not forget that it is easier to restore with nutritive drinks than with solid aliments.†† In considering the most essential—for Hippocrates, in the art of alimenting the sick, observes as well chronic affections as acute—notices when it is the proper time to allow food to be given and to regulate the quantity thereof, so that the patient, as much as possible, should be free from fever; also to suppress nearly all nourishment during the acute stage, but to sustain the strength, so that the patient may survive the malady.

These are wise precepts, and with what admirable logic are they deducted! How well do they indicate the superior mind, the vast genius, before which so many generations have already bowed! Will it not be said that modern science, the science of our day, has made their application with the most skilful judgment? But we must not deceive ourselves; these ancient precepts were not those of every one; they were not used as the guide by all the contemporaries of Hippocrates.

* Aphorisme 66, 7me section.
† 'Appendice du Régime,' &c., p. 461.
‡ Aphorisme, 2de section.
§ Aphorisme 4, 1re section.
‖ Aphorisme 29.
¶ Aphorisme 8.
** Aphorisme 31.
†† Aphorisme 11, 2de section.

Already, in the time of Asclepiades, there were men who had a system, who cared little for observations, and who treated their patients according to their fantasies and imagination. The immortal Servetus had under his eye more than one sect of extravagantæ. The Cnidiens had laid themselves open to his criticism. He mocked Heroditus, who killed his fever patients by certain courses and vapour baths, and Petronus, who gorged them with wine and meat. Later, Erasistratus, this wise Alexandrian, turned into ridicule Apollonius and Dexippe, who, he said, killed their patients by inanition. Thus we see there are in medicine systems which are not of recent date.

But I am going a little too far, perhaps. Hippocrates has carried me on to where I shall want the practical knowledge of my colleagues. In passing, I have not been able to resist the pleasure of showing how, by observation, the father of medicine arrived, two thousand years ago, at the same results as have been obtained at the present time by the most rigorous experimental methods.

(*To be continued.*)

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The members of the above Association held their thirteenth quarterly meeting in the Royal Institution, Manchester, on the evening of the 6th day of December, 1865.

The President, Mr. P. Taylor, in the chair.

The President opened the business of the meeting by requesting the Secretary to read the minutes of the last meeting, which were duly confirmed.

The President then delivered a few very appropriate remarks in relation to the present destructive disease which prevails amongst cattle, at the conclusion of which Mr. Greaves proposed Mr. R. Lucas, of Liverpool, as a Member of the Association, which was seconded by Mr. T. Taylor, and carried.

Mr. Greaves then proposed Mr. Cartwright, of Whitchurch, as an Honorary Associate. Seconded by Mr. A. Challinor, and carried.

Mr. Haycock proposed Mr. Friend as an Honorary Associate. Seconded by Mr. W. Challinor, and carried.

The Secretary having read letters of apology from those members who were unable to attend, the President called upon Mr. Haycock to read his paper on the disease termed

'VILLITES, or Inflammation of the Vascular Villi of the Coronet.'

The Essay was listened to with marked attention, and elicited an animated discussion, after which the society awarded to the essayist hearty vote of thanks.

[We regret that we are compelled to postpone the insertion of the above Essay until the next number, on account of its being illustrated with several woodcuts, which could not be obtained in sufficient time for the present number.—EDITORS.]

THE LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

THE usual quarterly meeting of this Association was held in the Medical Institution, Hope Street, on the evening of the 10th November, 1865. The following gentlemen attended:—Messrs. Lucas, Briscoe, Friend, Harwood, and Brydon, Liverpool; Greaves, Manchester; Cartwright, Whitchurch; Whalley, West Derby; Whittle, Worsley; Wood, Wigan; Dobie, Birkenhead; and the Hon. Secretary. Mr. Briscoe, Vice-President, in the chair.

The minutes of the former meeting having been read and confirmed, Mr. Harwood read a very able paper on the "Diseases of Hock-Joint," which was followed by an animated and an instructive discussion, in which the whole of the members present took part.

At its close, an unanimous vote of thanks was accorded to the essayist for his excellent paper. After which Mr. Thos. Greaves, of Manchester, presented the Association with a portrait of Professor Spooner, in a handsome gilt frame, in doing which he addressed the Association nearly as follows:

MR. PRESIDENT AND GENTLEMEN,—I have taken upon myself a task which will afford me great pleasure in performing; it is that of offering to you for your acceptance the portrait of Professor Spooner. In asking you to accept this portrait, I am actuated by two considerations chiefly. In the first place, it is an acknowledgment, or as a memento, of the many happy hours I have spent amongst you, the kindness and respect I have at all times received from you, and the benefit I have derived whilst attending these interesting meetings. In the second place, I believe in the trite maxim, viz., "Give honour to whom honour is due," and in doing honour to Professor Spooner we are at the same time conferring honour upon ourselves. I do not contend that he is perfectly free from all human frailties, but I maintain we have no living veterinary surgeon, and I very much question whether we have any one who has gone before, who has more deserved the admiration and esteem of the profession than he. When we remember the high position which he occupies, the length of time he has held that distinguished

position, his eminent qualifications, the deep interest he has at all times taken in the welfare of the profession, the numerous and valuable improvements he has instituted in the matriculation and education of the student at the College, these things, together with the long and unwearying assiduity with which he has served the profession in the council of our body corporate, demand from us our lasting gratitude. But in addition to all this, I must allude to that memorable speech of his before the Yorkshire Veterinary Medical Society, held at Leeds last January, upon veterinary politics, and which I believe was never excelled in broad, enlightened, and above all in liberal views. As such, it will reflect the highest credit upon him whilst he lives, and be remembered to his honour when he is dead and gone. With these observations, gentlemen, I beg your acceptance of the portrait of Professor Spooner.

Mr. Lucas, the President, in replying, said—Gentlemen, it is with no ordinary feelings that I rise to address you on the present occasion—feelings that, I am sorry to say, can scarce find suitable utterance; for, as you are well aware, we are already deeply indebted to our friend Mr. Greaves for the countenance and support he has bestowed upon us ever since the formation of this Association, and, as a further proof of his unwearied interest, I have only to point you to this elegantly framed portrait now lying before me, and which on behalf of the Association I have much pleasure in accepting. The subject of that portrait, as you are all well aware, is the Principal of the Royal Veterinary College, and it is with pleasure that I endorse all that has just been said of him by Mr. Greaves, as a man able and worthy of the high position he now occupies. When as a student I attended the College, Professor Spooner was then an extra-academical lecturer outside the walls of that institution. I and several others attended his class, with great benefit to ourselves, for he imparted to us much sound scientific knowledge, which we could not otherwise obtain, in a style of such elegance and ease, that it needed not the gift of prophecy to foretell his future career. Since he became connected with the College he has been the moving power in all improvements made there. Many there have been, but there is room for many more, some of which I have no doubt Professor Spooner will yet effect. His adoption of a preliminary examination before entering the College deserves the hearty thanks of the profession. Had this been done years ago the profession at the present day would have stood much higher in public estimation than it unfortunately now does.

The annual reports of the Secretary and the Treasurer were then read and adopted, after which votes of thanks to the officers for the past year were unanimously accorded, and the election of officers for the present year proceeded with, the result of which is as follows:

President, Mr. Lucas; Vice-Presidents, Mr. Proctor, Mr. Greaves, Mr. Ellis; Treasurer, Mr. Brydon; Honorary Secretary, Mr. Morgan.

The President, Treasurer, and Honorary Secretary are re-elections.

Mr. Whalley, West Derby, will read a paper at the next meeting of the Association.

GEORGE MORGAN, *Hon. Sec.*

Veterinary Jurisprudence.

NEWTON ABBOT COUNTY COURT.

(*Before* Mr. Serjeant Petersdorff, Judge.)

The case of *Lavis* v. *Hodge*, which for the last six or seven months has, under one form or another, occupied the attention of the public, was at last settled at a special sitting of the Court on Monday. A great deal of interest was manifested, and the Court was densely crowded during the proceedings, which lasted for about five hours. The action was brought by Mrs. Jane Lavis—widow of a farmer, residing at Lower Rocombe—against Mr. G. Hodge, to recover the sum of £33 15*s.* 6*d.*, in consequence of damages sustained owing to the defendant negligently conducting her sale in the month of May last. Mr. Carter, of Torquay, appeared for the plaintiff; and Mr. Francis, Newton, for the defendant.

Mr. Carter, in addressing the jury, said that he appeared on the part of the plaintiff—Mrs. Jane Lavis, who was the widow of Mr. Lavis, who in March last died at a farm called Lower Rocombe, in the neighbourhood of Torquay—who brought an action against Mr. George Hodge, auctioneer, of Torquay, to recover a sum of money, amounting to somewhere about £33 15*s.* 6*d.*, in the nature of damages which she claimed at his hands for negligently holding and conducting a sale of her property in the month of May last. He would, as shortly and as explicitly as he could, lay before them the circumstances of the case. He had said that Mrs. Lavis was the widow of a farmer residing at Lower Rocombe, and she, on the death of her husband, determined to discontinue the business of the farm. She instructed Mr. George Hodge to hold an auction of her effects, and that auction was held on the 8th and 9th days of May last. Amongst other stock a black mare, which had previously cost Mrs. Lavis about £22 or £23, which she had had for some time, and which, during the time she had it, had greatly improved in appearance, was sold, and realised the same amount, or within a few shillings of the sum, which the plaintiff had previously given for it. The sale was held by Mr. Hodge, who prepared certain "Conditions of sale," and amongst other things it was therein stipulated "which is to be taken away with all faults, if any, at the expense of the purchaser." The black mare was knocked down to a Mr. Bartlett, who resides at Ilsham. So far all things went on pleasantly and well. The mare was not taken away after the sale, and Mrs. Lavis thought it right that the animal should be delivered to the purchaser, and for that purpose she sent her son into Torquay to see Mr. Hodge; she then learnt for the first time that Mr. Hodge had abandoned her, and had not done his duty towards her, as he had been persuading Mr. Bartlett not to fulfil the contract he had

entered into. In point of fact, Mr. Hodge said that Mr. Bartlett should not have the horse. This was not right, as he should have stuck to his employer and client throughout. The lad who took the mare to Mr. Hodge was, in point of fact, frightened by what was stated; he said, "The mare is glandered; Mr. Bartlett shall not take the mare, it ought to be shot; if you don't take care you will be sent to the lock-up directly." The lad, proceeding up the street, met a man named Head, and the boy, half frightened out of his wits, was about to make some foolish bargain with him. At this juncture the mother saw the boy, and asked him what the meaning of it was. The lad told her what Mr. Hodge had said, and stated that he was about to sell the mare to Mr. Head. The mother said that he should not sell the mare to Head, but that he should take it back to the farm. It appeared, however, that Head got possession of the animal. The plaintiff then, for the first time, was advised legally as to what she could do in the matter. She was told, under the conditions of sale, that if Mr. Bartlett would not take the mare, she was to be re-sold. He, Mr. Bartlett, had bought the mare with all faults, and if there was any fault with the mare he must take her, and if he would not do so the mare must be re-sold, giving him ample notice of the day of sale, and sue him for the difference in the sums which the mare realised when re-sold, and that when knocked down to Mr. Bartlett in the sale conducted by Mr. George Hodge. This was the advice given the plaintiff, and the mare was re-sold in Newton by Mr. Buckland, auctioneer; she was sold without any warranty being given, and under these circumstances realised a sum of about £7 or £8, and then Mrs. Lavis applied to Mr. Bartlett for the balance of the money between £7 or £8 and the sum of £22 at which he purchased her at the auction, and the expenses attending the re-sale of the mare at Newton, in fact all the expenses incidentary to his having broken his contract. A summons was issued, and the case came on at Torquay. Mr. Hodge was then placed in the witness-box to prove the sale of the animal, and then it was learnt that he had not conducted the sale in such a manner so as to enable Mrs. Lavis to recover the sum of money for which she sued the defendant; that he had not complied with the Act of Parliament, which required that the conditions of sale should be affixed to the catalogue; there was no such written contract and agreement existing, so that there was nothing on which to found an action to recover damages sustained from Mr. Bartlett. The consequence was that Mrs. Lavis was nonsuited in the action. What, then, was the plaintiff to do? Should she sit quietly down and submit to lose her money in such a manner, or should she take proceedings against the auctioneer? She must either do one thing or the other, and so she sued the auctioneer for so neglecting to comply with the conditions of the Act of Parliament that she was deprived of money—the value of the mare which was sold. The defendant was an auctioneer, and the plaintiff had a right to expect that he was thoroughly acquainted with all that was legal in his profession, and that he was thoroughly competent to perform all the duties which attached themselves to

one of his profession. This, it appeared, was the first farm sale which Mr. Hodge had conducted, but that had nothing at all to do with Mrs. Lavis; she had a right to expect that, putting himself up as an auctioneer, he knew how to carry out his profession in a proper manner; and as he had not complied with what was required of him, he had made himself liable to the consequences, whatever they might be. The damages they sought to recover were—first, that they should have the full extent of the purchase-money of the horse; secondly, the expenses which Mrs. Lavis had been put to in endeavouring to obtain from Mr. Bartlett the sum at which the animal was knocked down at the auction, in fact all the expenses which were incidental to the negligence of the defendant in conducting the sale. These were the leading features of the case, and they were all that was necessary for him to call their attention to then; by-and-by, after his friend had opened his case and brought forward his witnesses, he would be able to go more minutely into the merits of the action.

[The auctioneer's catalogue was then produced, and handed over to his Honour.]

Mrs. Lavis, the plaintiff, being sworn, said that she was the widow of the late Edward Lavis, farmer, residing at Lower Rocombe, and who died on the 2nd March last. At the time of his death he was possessed of agricultural stock and other effects to the value of several hundred pounds. On the Saturday week after her husband's death she saw Mr. Hodge; he came to see her and undertake her sale. She sent for him the night before, and she told him that if he would manage her affairs with her landlord she would give him her sale. He did so, and afterwards returned, took an inventory and published bills. Twelve months' rent was due to her landlord at the time, and an arrangement was made with a relative named Johns, who agreed to become bond for the payment of it, she guaranteeing to hold him harmless.

Mr. Carter.—Did you not sign something?

Mr. Francis.—I object to your putting leading questions.

His Honour.—You are clearly irregular.

Witness resumed.—On the 24th or 26th March her son George purchased a black mare, which was included in the sale, and which cost about £22. She was a good mare, and so far as witness knew was sold in the sale.

By his Honour.—Was present at the time the mare was knocked down for £22, or £22 and something, to Mr. Bartlett.

(*To be continued.*)

LISKEARD COUNTY COURT.—Monday.

Before Matthew Fortescue, Esq., Judge.

MATTHEWS *v.* LAMB.

Mr. Fowler, of Devonport, appeared for the plaintiff, who is a wine and spirit merchant at Plymouth; and Mr. A. Hingston, of Liskeard, appeared for the defendant, a veterinary surgeon and horse-dealer, residing at Liskeard. The action was brought to recover a balance of £44 4*s.* 8*d.*, alleged to be due in respect of loss on the sale of a horse that was disposed of to the plaintiff and sold again by him, on the ground, it was represented, of its not fulfilling the warranty which plaintiff stated that defendant gave of its soundness.

Mr. Thomas Martin Matthews, sworn, said that having heard that Mr. Lamb had a good horse for sale, he called at his stables in Liskeard, and found that the horse he wanted to see had been sold. Mr. Lamb, however, pointed out another horse, and said, "I suppose that horse won't suit?" Mr. John Williams, witness's father-in-law, was present, and said he thought the horse was rather an old one. Mr. Lamb said that he could walk the horse six miles in one hour, and he should trot sixteen miles within the next hour. Witness rode the horse, and was satisfied with it; but he and Mr. Williams both pointed out that the right eye of the horse was "weeping," and looked dull, and that the hind legs were swollen. Mr. Lamb said, in explanation, that a horse's eyes were often so after having been out to grass, and the legs swelled sometimes when they had been long in the stables; but he added that "if a deal were made he would warrant that the horse should be found perfectly sound in every respect." Witness told Mr. Lamb subsequently that he had two horses at Plymouth which he would let him have in exchange for his horse, providing that Mr. Lamb paid him £10 also. Witness valued his horses at £52, and as defendant wanted forty guineas for his horse, the arrangement that defendant should pay £10 in addition to exchanging his horse, gave witness the price he required. Witness sent his horses to Polbathick, and in return received defendant's £42 horse. Thinking that the horse ought to receive a little care he sent it to Yelverton Farm, where Mr. Williams lived, and there it remained for a month, being well kept, worked moderately, and in fact treated like an invalid. At the end of the month the horse was returned to Plymouth from Yelverton, and witness then not liking his appearance at once called in Mr. Collins, veterinary surgeon, who immediately pronounced the animal to be unsound. The defendant was written to, but the letter was returned, whereupon witness sent back the horse to the plaintiff, in whose stables it remained two hours, and then it was sent to the Bell Hotel, Liskeard. Witness asked how it was that the horse had been sent back in Mr. Lamb's absence, and was told by the man who sent it back, "Oh, we get so many horses

sent back that way." Witness then had the horse sold by auction, and it realised but £11. Adding the expenses, the balance of loss between the sum realised and £52, the value of the horse, was the £44 odd claimed.

Cross-examined.—Never warranted his two horses to be sound; never stated that Mr. John Hex, of Plymouth, had had one of them and broken it in to double and single harness. What he said was that Mr. Hex had had the horse to break in. Never drove behind the horse with or without Mr. Hex, but had ridden him. Defendant warranted the horse sound in every respect. There was no agreement that witness should send defendant two gallons of sherry. Was aware that one of the horses would not work readily except in chains.

Mr. John Williams corroborated the evidence of his son-in-law as to the warranty. One horse of the two which defendant had was pointed out to defendant as being a good horse, with the addition that he would not go easily past a covered cart. Defendant saw the horses and was satisfied.

Mr. Collins, veterinary surgeon, spoke to the condition of the horse sold to plaintiff by defendant. He had a cataract in the near eye, constitutional ophthalmia in the off eye, and œdematous swelling in the hind legs. The blemishes were chronic; they could not have been contracted whilst the horse was at Yelverton Farm, and were not easily discernible to the unpractised eye.

Mr. Hingston then addressed the Court for the defence, stating that he had only just previously been instructed to appear in the case. The fact was that Mr. Matthews had two horses which were unsound, and Mr. Lamb had also an unsound horse. He was desired to state that no warranty was given, that Mr. Lamb bargained to take the two horses from plaintiff, and give his horse in lieu of them, together with £10 on his receiving two gallons of sherry, which he had not received. One horse was sold by defendant, and the other was so utterly useless that he should be glad to sell him back to plaintiff at any price, for he would not draw an empty cart.

Mr. George William Lamb was then called, and said that when plaintiff spoke to him about buying the horse he did not wish to sell him. Mr. Matthews knew him to be unsound, and he was known generally throughout the town to be unsound. His unsoundness, too, was palpable to any one. Witness never warranted his horse. Witness rode the horse, and then said, "He is coughing; how is his wind?" and witness then said, "Oh, I'll warrrant his wind." He had ridden his horse many a time with the hounds; asked forty guineas for him, because he knew that he had to take two horses in exchange. Agreed to pay the £10 when he had sold the two horses, and on condition that he should receive two gallons of sherry. Ten days after the exchange was effected Mr. Matthews told witness that his brother-in-law was highly pleased with the horse. Mr. Williams must have seen that the horse was unsound. Neither Mr. Williams nor Mr. Matthews pointed out anything

wrong with the hocks or the eye of the horse, and they did not ask him any question except as to the horse's wind. Had sold one of the two horses—a mare—for £15.

Mr. Williams said that he knew a gentleman who would gladly give £25 for the mare.

Mr. Lamb added that the second horse would stand still with any light vehicle, and he could not get him to leave his yard with a common gig.

His Honour said that although the warranty was denied, the evidence that a warranty was given preponderated. As there did not seem to be an opportunity of settlement, he must give judgment for the plaintiff for £30.

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with th necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Wallis, Page, Cambridge

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altringham
Lewis, Walter, Crewe
Taylor, John Boardmau, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria
Reynolds, Richard L., Alfreton

DERBYSHIRE.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

DEVONSHIRE.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

DORSETSHIRE.

Banister, Albert E., Bridport
Redwood, Joseph, Dorchester

DURHAM.

Allison, William, Thornley
Dudgeon, David, Sunderland
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Plews, Thomas, Stocton
Thompson, Thomas, Sunderland

ESSEX.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, Woodford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

GLOUCESTERSHIRE.

Barling, Frederick Wm., Newnham
Hobbs, Henry, Newnham
Murray, A. J., Royal Agricultural College, Cirencester
Paradise, John, Dursley
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

HAMPSHIRE.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham

HAMPSHIRE (*continued*).

Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

HEREFORDSHIRE.

Barling, J. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford
Proctor, Harrison, Hertford
Wilson, William, Berkhampstead
Webb, Thomas G., Bishop's Stortford

HERTFORDSHIRE.

Rushall, Alfred, Bishop's Stortford

HUNTINGDONSHIRE

Dickens, Charles, Kimbolton
Fordham, Thomas B., Godmanchester
Garner, Brand, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, William, Margate
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Frederick Richard, Lewisham
Martin, John Bean, Rochester
Morgan, Charles, Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, F. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Bridge, Roger, Bury
Buckley, Samuel L., Blackburn
Challenor, W. I., Worsley, Manchester
Ellis, John, Liverpool
Ellis, Peter, ditto

LANCASHIRE (*continued*).

Heaps, William, Preston
Howell, James, Middleton
Hutchinson, —, Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawson, John, Manchester
Lawson, John, jun., ditto
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Polding, P. Oswald, Bury
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Taylor, Thomas, Manchester
Twist, Charles, Woolton

LEICESTERSHIRE.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston
Clarke, Thomas Allen, Horncastle
Cutting, Henry, Market-Raisen
McHugh, John T., Brigg
Santy, Arthur Henry, Market Deeping
Sharman, Thomas B., Old Leake

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Brown, Geo. T., White Horse Yard, New Cavendish Street
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Hirst, Charles Samuel, Barnet
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H., Harleston.
Carter, Charles N., Swaffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Branford, Wm. Catton, Oundle
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Stephenson, Clement, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jones, James B., Ludlow
Leigh, Nathaniel, Bristol
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton
Walters, Robert G., Newport

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Hutchings, William, Kimpton
Leigh, Nathaniel, Bristol

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Checkett, Benjamin, Wolverhampton
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Harry D., Wolverhamton
Robinson, William, Tamworth

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, Charles T., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russell Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes and Lowe, John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough

SUSSEX.

Crofts, Henry, Arundell
Crowhurst, James, Warbleton

SUSSEX (*continued*).

Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Watson, Walter, Rugby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Bibby, James, Calne
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, Robert Tutnall, Bromsgrove
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, John Wilkinson, Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Bourdass, George, Bridlington
Broughton, William, Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, ditto
Cooper, Job, Market Weighton, Brough
Cuthbert, John, Leeds
Dray, Edward C., ditto
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Secker, Thomas, Ripon

WALES.

Bodington, George, Canton, Cardiff
Kennedy, Thomas, Wrexham

SCOTLAND.

ABERDEENSHIRE.
Snowball, Matthew C., Huntley

BERWICKSHIRE.
Hogarth, George, Berwick

FORFARSHIRE.
Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.
M'Call, James, Glasgow

LINLITHGOWSHIRE.
Borthwick, John, Kirkliston

PEEBLESHIRE.
Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.
Robertson, William, Kelso

ROYAL COLLEGE OF VETERINARY SURGEONS.

AT a meeting of the Court of Examiners of the Royal College of Veterinary Surgeons, held on the 21st ult., the following pupils of the Royal Veterinary College, London, passed their examination, and received the diploma of the College :

Robert Ward, Winchester ; John Edmund Jarvis, Knightsbridge, Middlesex ; Arthur Hastings Farrow, Whitechapel, Middlesex ; Percy Richard Tattersall, Barnet, Herts.

WE have much pleasure in announcing that our colleague, Professor Simonds, has been honoured by election as a *Foreign Associate of the Imperial and Central Society of Veterinary Medicine of France,* the highest dignity which the society can bestow on foreign members of the profession.

OBITUARY.

WE have to record the death of Mr. William W. Heanley, Leighton Buzzard, Beds, who died of consumption. His diploma bears date February 11th, 1830. Also, on the 4th ult., Mr. William Lucas, of Hartshill, Atherstone, at the advanced age of eighty. His diploma is dated January 7th, 1812.

ERRATUM IN NO. 456.

Page 886, line 21, *for* " Mr. E. Draper," *read* " Mr. E. Drake."

THE

VETERINARIAN.

VOL. XXXIX. No. 458. FEBRUARY, 1866. Fourth Series. No. 134.

Communications and Cases.

CATTLE PLAGUE.

Out of the terrible calamity that has fallen on the country scientific men are extracting all the good that can be obtained from such an evil, viz., a knowledge of its nature and character. Experiments upon every really important phase of the subject are being carefully conducted, and we may therefore anticipate some valuable results.

It will be interesting, meanwhile, now that we are familiar with the disease, and the various views that have been promulgated respecting it, to pass in review the really salient points of the inquiry.

When the malady first commenced its ravages in our country, it was designated by common consent "typhoid fever," and all suggestions for preventing or treating it were based upon that assumption. For some time no question was raised as to the truth of the comparison, but the observations which were made upon the *post-mortem* appearances gradually gave rise to doubt, and then led to the conclusion that the cattle plague was not in any way allied to "typhoid fever" of man, as in that disease a morbid state of Peyer's patches is invariably present, but in the cattle disease occurs only as an occasional lesion. About the same time the discovery was made that *an eruption* over the surface of the body was constantly present in well-marked cases of cattle plague, not merely the occurrence of local eruptions upon the udder and inside the thighs, such as had been seen

at first, but a well-defined and general eruption extending over the greater part of the integument, and easily perceptible in hides from which the cuticle had been removed. It was remarked by men engaged in the trade of tanning that the skin of an animal that had suffered from plague could be distinguished from healthy hides with certainty by this sign. The idea of the typhoid character of the disease was now entirely abandoned, and the affection was directly classed among the "exanthemata." Careful observers contented themselves with stating that the malady possessed certain characters in common with smallpox, but that it was in other respects dissimilar, and that it could only be safely defined as an "irruptive fever" tending to the "typhoid state."

Mr. Hancock's case, now so well known, gave an impetus to the hesitating judgment of those who were impressed with the points of similarity of the cattle plague to "variola," and since the accidental inoculation which that gentleman suffered, high scientific authorities have not hesitated to express decided views in favour of the resemblance of the disease to, if not its identity with, smallpox of man. As a natural consequence of this, the vaccination of cattle is exciting an almost painful attention throughout the country.

It is no part of our duty to oppose, nor, on the other hand, to support the extreme views which are now rapidly gaining ground. The whole question is being submitted to the "crucial test," that of direct experiment, but such investigations are not the work of a day; and now, more than ever, we have need of patience; still we cannot refrain from deprecating the indulgence of any hopes of the protective influence of vaccination.

Members of the veterinary profession will hardly need to be told how difficult it is to transmit the vaccine disease to the cow by the introduction either of the vaccine or variolus matter of the human subject, and how impossible it is to obtain primary lymph when the true cowpox has not been known to exist, excepting in occasional instances, among cows for the last twenty years or more. The smallpox theory is not a new one, as the paper written by Dr. Layard and published in this number of our Journal will prove; the same idea has been held and defended by others of the older writers. There can be no harm in investigating the truth of such a view, but there is reason to fear the establishment of a false security, as there will be found plenty of "vaccinators" throughout the country who will for a small remuneration perform the operation in some sort; and in the absence of

proper supervision, the farmer may be misled, and in the conviction that his animals are safe be inclined to abate his vigilance.

It appears to us to be the duty of members of the veterinary profession to impress upon the public the fact that negative evidence is of no value. It will not suffice to say that a number of animals were vaccinated and escaped the plague, and that therefore vaccination is a preventive, any more than it will do to say that a number of cows were inoculated with the matter of pleuro-pneumonia and escaped the plague, and that therefore this form of inoculation is a protection. An argument in favour of the protective influence of dirt and impure atmosphere might be drawn from the fact that hundreds of animals kept in the dirtiest sheds, and under the most unfavorable conditions, have escaped; all these positions are true, and all are negative. Until the animals presumed to be protected by any means are exposed to direct infection and resist its influence, there is no proof of the protective effects of the agency employed. If vaccinated animals will bear this test, then vaccination will be as great a boon to animals as it is to man, but until it has been shown to be so by positive evidence, we trust that the intelligence of the country will prevent a blind reliance upon its efficacy.

Inquiries reach us from all parts respecting the means of obtaining lymph, and the best situation for the operation. To the first query we are compelled to return an unsatisfactory answer; in fact, at the present time, there is no superfluity of vaccine matter in the country; and for that reason alone it would be very unwise to use it until it is found to be beneficial. The site of the operation may conveniently be the perinæum, or the skin of the vulva, the punctures being so placed as to escape friction from the animal's tail. In some instances the tip of the tail has been selected, and in others the inside of the ear, but the thinness of the skin in the region of the perinæum, and the absence of hair on the vulva, render them especially available for the purpose.

That something will, ere long, be discovered to arrest the course of the disease, must be the wish of every one who is interested in the welfare of the country. The returns from the Veterinary Department show a weekly increase in the number of cases. And the "local authorities," recognising the gravity of the situation, and exercising the powers conferred on them by the Order in Council, are restricting the movement of cattle all over the land, with what effect remains to be seen.

CANCER OF THE SPLEEN, A VERY LARGE MESENTERIC TUMOUR, AND AN ABSCESS IN THE GASTRO-SPLENIC OMENTUM OF A HORSE.

By J. D. Barford, M.R.C.V.S.

"Dear Sir,—I could not refrain from forwarding you a morbid specimen removed from a three-years-old horse. He was purchased by a baker in this town a few months since, and although very low in condition, he nevertheless did the work required of him tolerably satisfactorily until about ten days ago, when he became weak and very dispirited; at last he could hardly be made to walk, and refused his food. He was received into my infirmary a week ago, with symptoms indicative of general prostration and loss of appetite. I first directed my attention to the digestive organs, by giving laxatives, followed by stimulants and tonics, but without effect. He ate a small quantity every day, but I could not restore his appetite. He continued in this state up to yesterday morning, without showing any indications of acute pain; the only particular symptom was, that he lay down a great deal, but evinced no *uneasiness*. His pulse was weak and ranged about from fifty to sixty-five per minute. Yesterday morning I found more general disturbance. His breathing was accelerated and altogether indicative of general suffering. On returning home from my rounds I found he had died about 11 a.m., apparently without a struggle.

"*Post-mortem* examination four hours after death disclosed such a sight as I think in the course of my experience I never before beheld. The immense mass I have sent you was situated on the near side just under the lumbar vertebræ, attached anteriorly to a part of the liver, and two folds of the colon, and posteriorly to the kidney; in fact, my first impression was, that this organ was diseased, but on dissection I found it was sound in structure. Near to this mass was situated an immense abscess, containing not less than half a gallon of pus. I believe the bursting of this abscess was the immediate cause of death, as the contents were floating about the abdominal cavity. The whole of the mesentery was highly diseased, and completely broken down in several places; the other organs were for the most part healthy. The heart, perhaps, was somewhat larger than natural, and the muscular walls much paler than usual. Lungs perfectly healthy. Liver not quite sound, as here and there were small abscesses.

"I venture to think this is a case of not very frequent occur-

rence in so young a horse; and if it is worth publishing, you are at liberty to make what use of it you like. At your leisure perhaps you will kindly favour me with a line, with your opinion of it and any remarks you may think desirable.

"I remain, dear Sir, yours faithfully,

"J. D. BARFORD, M.R.C.V.S.

"To Professor VARNEL"

REMARKS BY PROFESSOR VARNELL.

Disease had so much altered the outline and general appearance of the organs above referred to that it was with the greatest difficulty they could be recognised at all. The principal object of interest in this case was the spleen; but its shape had become so completely changed that, had it not been for a small patch here and there which retained its original appearance, I should not have been able to make out of what the large irregular mass really consisted. In making a section through this organ, if I may now so call it, the interior, instead of being of its natural bluish-purple colour, was studded over with small whitish patches (the Malpighian bodies) about the size of a small lentil, and was traversed in a transverse direction by small white lines (the trabiculæ). It consisted of an almost uniform greyish-white mass, very soft and friable in texture. A small portion of its left extremity was transformed into a semifluid matter of a dark drab colour. Small patches scraped from the surface of the whitish portion was found to consist of fine granular matter, in which there were dispersed many irregular nucleated cells.

The mesenteric tumour was as large as a man's head; it was soft in texture, and contained in its interior many cavities, which, in some instances, opened freely into each other. They contained a dark-brown fluid, about the consistence of porridge. The abscess, which had formed between the layers of peritoneum, contained not less than two quarts of a lightish-brown purulent fluid. The walls of this sac had become very dense, and much thickened. It would be very difficult to assign a cause for the diseased condition of these organs. I think we may fairly infer that the animal possessed a scrofulous *diathesis*, and perhaps exposure and bad living during some periods of its life had favoured the development of the disease we have endeavoured briefly to describe. It is a valuable addition to morbid anatomy, and I feel indebted to Mr. Barford for the trouble he has taken in forwarding it to me for inspection.

CASES COMMUNICATED THROUGH, WITH REMARKS THEREON BY, PROFESSOR VARNELL.

CANCER OF THE LUNGS AND VARIOUS OTHER ORGANS OF A PONY, TOGETHER WITH ATHEROMA OF THE LINING MEMBRANES OF THE HEART AND ARTERIES OF THE SAME ANIMAL.

By J. C. Broad, M.R.C.V.S., Market Street, Paddington.

On the 9th of October last I was sent for to attend a bay pony, fourteen hands high, and five years old, belonging to Sir F. Halliday, Cleveland Square, Hyde Park.

Symptoms.—The coat dull and staring; the skin and extremities cold; pulse forty, and weak in tone; membranes presenting but slight change; bowels rather costive, urine scanty. He showed but little desire for food or drink of any kind.

Auscultation gave no positive indication of disease in the chest, nevertheless I could not but think that the heart and lungs were affected. He frequently lay down, and while lying appeared to be at ease.

In expressing my opinion of the case to the owner, I stated that, in other respects, I could not detect any actual disease as affecting any organ in particular, but believed there was a general derangement of the digestive organs, associated with a deficiency of tone in the whole system.

I at once commenced my treatment, which was continued for about a fortnight, varying the same as the case seemed to require, but without observing any favorable change of condition. At the end of another week a slight improvement appeared to have taken place, but that impression on my part was not of long duration, for in a few more days my patient relapsed into a most unfavorable condition; the pulse had risen to sixty, and was weak in character. I now noticed that his breathing became more embarrassed, and from the unfavorable symptoms presented I predicted a fatal issue.

November 9th.—He was sent to our infirmary, in order that he might receive more attention than was thought could be rendered him at his stable.

12th.—The owner was now apprised that the case was hopeless, as I believed consolidation of the lungs had to a very considerable extent already taken place, and effusion into the cavity of the chest had also commenced; but he (the owner) expressed a desire that my treatment should still be continued, in order to ascertain if there was any chance of recovery.

Treatment continued accordingly till November 26th, when,

there being evidently not the faintest hope left of the pony's recovery, he was by my advice destroyed.

Post-mortem.—Removing the intestines, a large tumour was found attached to the single colon; in fact, it was firmly attached to the intestines on both its sides. It weighed about twelve and a half pounds. The spleen was enlarged, and full of small tumours the size of walnuts, and was similar in appearance to the one just adverted to. The liver presented a somewhat similar appearance to the spleen, but indicated a more incipient stage of disease. The remaining abdominal viscera were healthy. The diaphragm being removed disclosed the same abnormal deposit over nearly the whole thoracic surface. The lungs were very large, extremely heavy, and consolidated throughout their whole structure. The chest contained about fourteen quarts of fluid, tolerably clear, and devoid of the usual flocculi of lymph. The heart was next examined. The whole of the inner surface of the left auricle, and also the lining membrane of the large vessels in communication with it, were, for a considerable distance, completely covered with an atheromatous deposit. The aorta also presented the same condition; the lower part of the left ventricle was similarly affected; both the auricle and ventricle, on the right side, were healthy.

REMARKS BY PROFESSOR VARNELL.

Statistical information respecting any important disease is of the greatest value, both in a pathological and also a practical point of view; we, therefore, feel indebted to Mr. Broad for the opportunity he has given us of adding so valuable and interesting a case, as the above undoubtedly is, to the literature of comparative pathology.

To the practitioner of veterinary medicine a record of cases in which the symptoms are faithfully described serve as important references—to the junior practitioner especially they are of the greatest service. But even with such aids we cannot suppose a case of cancer of lung could with any degree of certainty be diagnosed, so obscure is the disease. Should, however, the symptoms described in a number of well-authenticated cases be present in any particular instance, and should there coexist some visible disease of a corresponding nature, a diagnosis could be more correctly formed. Mr. Broad, even with the extensive practice he has had, no doubt experienced a difficulty in determining the nature of the disease his patient was labouring under. He could not have suspected that the consolidation of the lungs depended upon a cancerous deposit in their structure, or that the symptoms he witnessed were in any way due to an atheromatous

condition of the lining membrane of the left cavities of the heart, the aorta, and its divisions. The history of the case leads to the conclusion that this disease, particularly in the lungs, was not preceded by active inflammatory action; for Mr. Broad states in his letter, that the pulse was only forty per minute at the time he was first called in to see the pony, and that there were no symptoms to indicate disease of the respiratory organs to any appreciable extent.

There can be no doubt, however, that disease had been and was rapidly progressing, for on the 9th of November Mr. Broad predicted a fatal issue.

I carefully examined the parts brought to the college for my inspection. The lungs were in a semisolid condition, and presented a peculiar mottled appearance, which was especially evident on the surface of a cut section. The outer part of the lungs, as a whole, had the same character, and was much lighter in colour than they are naturally. This well-marked peculiarity was no doubt due to the abnormal deposit in the interior of the air-cells, or in the interlobular tissue. I believe it existed in both situations. In some parts it was found to be present in lightish points, varying in size from that of a pin's head to that of a small pea. In others it had more of a striated character. A small quantity of matter scraped from these places, and examined under the microscope, was found to consist of a granular substance and irregularly formed nucleated cells. The larger bronchii were pervious to the air, but the finer tubes, together with the air-cells, seemed to be choked by deposit internally, or collapsed from the pressure of the external abnormal growth. So long as a sufficient number of the air-tubes and air-cells were free to admit the atmosphere necessary to arterialize some portion of the venous blood sent to the lungs, the animal lived. I cannot look upon the morbid condition of the lungs, in this case, as primary, for we find that other organs were extensively diseased (see Mr. Broad's letter). The development of cancer most likely had its origin in the mesenteric lymphatic glands, and the germs of the malady were probably carried from these glands to the lungs, and some other organs, where they formed colonies, and, by their rapid growth by multiplication, very soon invaded so much of the structure of the lungs as to render these organs incapable of assisting in carrying on the normal functions of life.

With reference to the pathological condition of the heart and blood-vessels, I think it possible that the atheromatous condition of their lining membranes was due to a retained material in the blood, the result of faulty excretion; and that the occurrence of atheroma in the arteries, and not in the veins, is, perhaps, owing to the rapidity of the circulation in the former, as compared with

that in the latter. Of this, however, I am by no means positive. I have often met with atheroma in the arteries, both in the aorta and in the pulmonary arteries, but never, that I recollect, in the large veins. In the case of this pony, the atheroma was present in the left auricle and ventricle, in the bicuspid and semilunar valves. It likewise existed in patches along the course of the aorta and some of its divisions. In some places the deposit in the serous membrane was calcified. This was particularly the case near the attached border of the mitral and aortic valves; the cretaceous material having a peculiar chalky appearance. In other places, the deposit seemed to have formed more particularly in the subserous tissue, and to have thereby produced a considerable thinning of the middle coat of the artery. The disease affecting the other organs alluded to in Mr. Broad's communication presented the same microscopical appearance as that which was observed in the structure of the lungs, to which organs, as we have before stated, the affection may have been conveyed through the medium of the circulation.

These few remarks but imperfectly convey to the mind of the reader an idea of the appearance of the disease, and but partially explain its pathology; nevertheless, when they are studied in conjunction with Mr. Broad's description, the case may not be altogether uninteresting or uninstructive to many of the readers of this Journal.

A case resembling the foregoing was forwarded to me by Mr. Fletcher, V. S., of Lincoln. It is rather remarkable that two cases so nearly identical in character should occur nearly at the same time. In the May number of the *Veterinarian* for 1864 two similar cases are recorded, both of which also occurred about the same time. One of them was recorded by Mr. South, V. S., of Bond Street; the other by Mr. Clark, V. S., of Islington, so that we now have four well-authenticated cases of cancer of lung. Previous to 1864, I question whether a single case of the kind can be found in English veterinary literature. As the morbid appearances, both as recognised by the unaided eye and also by the microscope, are so very similar, I shall simply record Mr. Fletcher's communication, and append to it only a few remarks.

"Lincoln; *Nov.* 15*th*, 1865.

"Dear Sir,—I have this day sent you a basket containing the heart, portions of the spleen and lungs, also a tumour, taken from a pony yesterday. It is possible it may not be new or interesting to you, but the history of the case has created something of surprise in my mind, and may perhaps be of interest to the student.

"The animal from which the above-named parts were taken was a seven-years old mare pony, remarkable for its well-doing and good constitution up to last May, when it was observed not to feed quite so well as it had hitherto. No great notice was taken of it for four or five weeks, when the animal had evidently shrunk, was weak, and fed badly. My attention was called to it in the beginning of July; I found great debility, but could not find a cause, as there was not the slightest symptom of disease. I administered vegetable tonics and grass in the day; a fortnight elapsed; no improvement. I then gave carbonate of iron with a vegetable tonic, and an alterative occasionally; no improvement. Prescribed stimulants, which did not agree with the patient. Then gave a vegetable tonic, with arsenic, which seemed to have a good effect for a week. My client then tried medicines of his own, which produced no benefit. The animal gradually wasted, without showing any symptoms of disease; and it was not till the last three or four weeks I could give my client any idea of what was the matter, when I told him that I feared there was disease of the mesenteric glands. Up to the last fortnight the pony occasionally did light work. I saw her about three weeks since, when she was drawing a lightly laden cart. There was no disturbance of the breathing; I did not auscultate, as I had done so three weeks before, but did not detect anything wrong in the respiratory murmur.

"The owner now told me that he had made up his mind to have the pony killed. This was done, and I made a *post-mortem* examination. For this purpose I had to go twelve miles for no other remuneration than the information I could get out of the case; and this great distance was the reason I only saw the pony three times during her illness. The pony walked half a mile to be slaughtered without signs of distress.

"*Post-mortem.*—The omentum was a good deal inflamed, and studded with small bodies the size of a pea. The spleen throughout was like the piece I have sent. The small intestines were normal. Mucous portion of stomach redder than natural. The whole of the lungs like the portion forwarded. The liver soft in structure, but with a healthy appearance. The heart you have. The post aorta was studded with the same deposit as the heart for three inches along its outer portion, the rest part healthy.

"Yours very truly,
"T. Fletcher."

REMARKS BY PROFESSOR VARNELL.

It is worthy of remark that, in all the cases of this description I have met with, the horses have been young ones.

In the case of Mr. South the horse was only five years old; in that of Mr. Clark it was about the same age. The horse, in Mr. Broad's case, was but five years old; and that in Mr. Fletcher's only seven. These facts, statistically considered, are worth notice. Another peculiar feature in these cases is, that although disease must have been going on in the organs involved long before any illness in the horses was observed, and that when it was noticed by those who had the care of them, it was but very slight. The veterinary surgeons, when consulted, viewed the disease either as simple debility, a slight cold, or a mild attack of influenza. As the disease progressed, however, the symptoms became suggestive of thoracic affection, but its true nature was not suspected. It must be considered of importance to be able to determine the nature of the disease an animal is labouring under, in order that a correct prognosis may be formed; and although we can hardly be expected to do so in similar affections to those we are recording, it must be admitted that the practitioner may be considerably aided in his judgment by a reference to the symptoms of a number of cases upon the authenticity of which he can rely.

DIFFUSED FALSE ANEURISM.

By D. A. Aitchison, Wicker, Sheffield.

The case described by Mr. W. Jackson in this month's *Veterinarian*, under the above heading, reminds me of the following case which I treated successfully in the year 1864, and which I think may be useful to the junior members of the profession, as it would have been to myself at the time. I never met with a similar instance, either in my practice or in the course of my readings.

On the 20th of September, 1864, I was called to see an aged chesnut pony, about 14½ hands high, and pretty well bred. I was told that he had fallen suddenly lame and was unable to proceed with his load of potatoes, which he was bringing to market; and on examining him I found that he could with very great difficulty move the near fore leg; he was sweating a good deal, but appeared to suffer very little pain when allowed to stand quiet. There was considerable tumefaction, and, as I at first thought, emphysema. On inquiring into the particulars of the case, I was told by his owner that he "never had seen anything wrong with the animal until the moment he fell lame as if struck by a thunderbolt; and so great appeared to be the pain, that he was sure he had either put his shoulder out or broken some

of the bones of the leg." I carefully examined his pulse, which I found to be small and in that weak condition indicative of extensive hæmorrhage. Directing my attention to the shoulder, I discovered that the tumefaction was rapidly increasing, so that the neck and shoulder were level; the enlargement, meanwhile, continuing to spread both interiorly up the neck and posteriorly behind the shoulder, and down between the fore legs. From this I diagnosed rupture of some important blood-vessel, and gave the owner to understand I had very slight hopes of permanent recovery, but promised to use my utmost endeavours to bring about a satisfactory result if he thought fit to incur the expense, which was a serious consideration with an animal of so little value.

I had the pony led carefully to his own stable, which was within a quarter of a mile from where I found him, and ordered a constant stream of cold water to be poured from a height on to the swollen parts, and continued until I saw him again. I shortly procured some ice, which was broken, and applied over the parts until the ice was dissolved, when cold water and freezing lotions were resorted to, and a plentiful supply of gruel exhibited; but as the animal lay down in about four hours and showed signs of fainting, I administered ℥ss Spt. Amon. Arom. in a pint of gruel every half hour; after three hours of this treatment he began to revive a little, his pulse increased in frequency and became a little stronger; I ordered the treatment to be persevered with all night.

21st.—I found the pony still improving, and he took notice of me as soon as I approached him; continue the treatment, give the ammonia alternately with ℥iss Ferri Sulph.; gruel to be made very thick. At night he was a good deal stronger, and could raise his head and pick a little hay, but I ordered the hay to be kept from him and thick gruel substituted, to prevent as much as possible any muscular exertion; the patient to be kept quiet.

22nd.—Still improving, continue the same treatment. I impressed upon his owner that everything depended on his persevering with the cold applications, and ensuring quietude. At night the pony found to be greatly improved, but rather restless; the pulse 73, and stronger; allowed a little grass to be given to keep him quiet; continue the other treatment, leaving off Spt. Amon. Arom.

23rd.—A little fever present, with a degree of anxiety betrayed in the expression of the eye. Administered Mag. Sulph. ℥ij, Pulv. Potass. Nitras ℥j, Tinct. Gent. ℥j, with gruel every four hours; give an enema every two hours, and encourage him to get up without startling him or using

coercion; continue cold applications. At night I found him up and eating grass out of the rack; there was still some fever, but his countenance was more calm; persevere in the treatment.

24th.—Greatly improved, but the pulse keeps up in frequency. Order boiled oats or barley, with linseed and plenty of bran, with green forage; at night, still up, and does not seem inclined to lie down again. "Persevere with the treatment a little longer, and all will be well."

25th.—Still going on well, pulse 75. Order him to be led gently round the yard in my presence; continue the treatment. He went on well from this date, and on the 29th he was brought to my surgery, when I made an incision in the shoulder, from which I extracted nearly 10lbs. of coagulated blood. After treating the wound for some time, I had the satisfaction of seeing my patient at work in less than three weeks from my first visit. He has continued well up to the present time, and may be seen in our vegetable market plying for hire any day of the week.

THE EMPLOYMENT OF SPROUTED GRAIN FOR FEEDING PURPOSES.

By Isaac Seaman, M.R.C.V.S., Saffron Walden.

Gentlemen,—The enclosed is a copy of letter which I have addressed to the Chancellor of the Exchequer, in consequence of the Inland Revenue prohibiting the unrestricted manufacture and use of semi-malted barley and wheat as food for herbivorous animals. Trusting you will give it place in the next number of the *Veterinarian*,

I am, yours, &c.

To the Editors of 'The Veterinarian.'

"Priory House, Saffron Walden;
Jan. 6th, 1866.

"*To the* Right Hon. W. E. Gladstone, M.P., *Chancellor of Exchequer.*

"Sir,—Observing the frequent recurrence of periods of great difficulty in obtaining wholesome cattle food, it has been my constant aim to prove to the farmer the possibility of manufacturing his own by a most simple method from the produce of his farm. Wheat or barley steeped, spread upon a floor until it sprouts, and used while moist, is the material I have now succeeded in convincing agriculturists is far superior in quality, at the price of

raw grain during the last five years, twenty per cent. cheaper than any manufactured food he can purchase. But now that its value is becoming appreciated, and its use greatly extending, I am told by the Board of Inland Revenue, that it is illegal to prepare the grain, except by a licensed maltster. It is, sir, truly unfortunate at this particular time of high price meat, scarcity of wholesome cattle food, when, to use the language of the *Times* a few weeks ago, that 'so far as meat is concerned famine is at our doors.' That Excise restrictions should be allowed to continue upon the manufacture of any article of cattle diet, and more especially upon one which of all other cattle foods is the most wholesome, and the cheapest, quickest, and best quality mutton and beef producer, as can be irrefragibly proved by the experience and testimony of leading agriculturists of all classes, confirmed by that of a very eminent French grazier; and the assurance given by the honorable member for Chester, that any letter addressed to the Treasury on the subject would receive every attention, will I trust be deemed a sufficient justification for my troubling you with this communication.

"During the last two seasons, a very large number of lambs have been reared, thousands of sheep fatted, and upwards of twenty different flocks debilitated by disease restored to health, in this and other neighbourhoods, by using semi-malted grain, and during the last two tropical-like summers, when the grass crops have almost entirely failed, this food has been found of the greatest value, resembling more in its effects the natural food of sheep than any other that I am acquainted with. It is an excellent substitute for turnips and green rape of winter, and the different clovers and grasses of summer.

"During the last lambing season, the advantage of using germinated wheat and barley has been most marked; on many farms where large flocks of breeding ewes were kept, scarcely a turnip had grown, and whilst twenty per cent. of lambs were lost from flocks fed upon dry, and hence indigestible food, not more than one per cent. was lost from those fed upon semi-malted wheat and barley.

"Twenty-five years' experience as a veterinary surgeon in extensive practice, in a great sheep breeding and fatting district, has convinced me of the scarcely to be exaggerated importance of the subject. I discovered at an early period that a very large proportion of the mortality of sheep and oxen was attributable to improper food, and I then commenced a series of experiments on the subject which have led me to the conclusion that grain semi-malted is incomparably the best form in which it can be used as a food for cattle, and is entitled to stand in competition with any other that can be resorted to. Theoretical considerations alone

first induced me to try it as food for fatting herbivorous animals, and experiments concluded fifteen years ago, convinced me that grain so prepared is the most wholesome and quickest of all other flesh-forming foods.

"Until 1860, horses only had been the subjects of my experiments, but during the spring of 1861, a nobleman in this district, distinguished for his desire to promote in every way the advancement of agricultural science and practice, permitted me to apply it to an ewe flock; the experiment was a signal success. The sheep were maintained in perfect health, and fatted their lambs very fast. From that period I have continued to urge the use of this new food upon flockmasters generally; much prejudice existed against it at first, but gradually converts were made, and about a month ago, when I received the communication from the Inland Revenue before referred to, not far short of ten thousand sheep, beside horses and oxen, were to my knowledge being fed with it; and on making the communication to them, the Excise notice was looked upon by the different flockmasters as a positive calamity. I was answered by some in the following terms, 'Well, if the Government is determined to maintain the prohibition of the raw materials of our own growth for the production of meat, the meat consumer must blame those to whom alone it attaches for the high price of meat.'

"During winter, 1864-5, the consumption of semi-malted grain on the farms of one proprietor amounted to twenty-five sacks per week, as food for sheep, lambs, and horses; and it is most satisfactory to remark, that lambs from his flocks from eleven to thirteen weeks old fetched, in the Metropolitan market last spring, from 42*s*. to 44*s*. each, and lambs from a flock of another farm fed upon the same kind of food, sold in the same market for 46*s*. each—the highest price obtained during the whole fat lamb season. (Trustworthy evidence can be produced as to facts.) The dams of these lambs were afterwards fatted upon the same material during the following summer, and sold at a Repository in this borough, from 70*s*. to 85*s*. 6*d*. each. I have now lying before me a letter from a gentleman at Spilsby, Lincoln, who says, 'Since being prohibited preparing grain as advised by you, my lambs are not doing so well, and will not be worth so much by 5*s*. per head in spring, were I allowed to continue the use of the grain.' 'I have some horses,' he continues, 'which I should have no difficulty to fatten with sprouted grain, but at rest, and fed upon raw food in sufficient quantity, are sure to become diseased.' Oats and beans have now risen to one shilling and threepence per stone. Barley one shilling, and wheat is only worth one shilling and a penny per stone. I am frequently asked if the latter cannot be substitued for the two former grains? Wheat

and barley may be given to oxen, sheep, and horses, if germinated, but in a raw state, whether crushed or uncrushed, are deadly poisons.

"The crops of turnips, wurtzel, green rape, sainfoin, trefoil, clovers, and meadow grasses, the ordinary raw materials of beef and mutton, were far below the average in 1860; they were more deficient in the following year, and in the last two, next to an entire failure. The failure of the natural foods of our own soil has compelled the farmer to seek for a supply elsewhere, and of foods artificial as well as natural. The different cakes have been in great demand, and, with increased demand, increased price and increased adulteration, and, from the adulteration, increased mortality of stock. The concurrence of these circumstances has produced the rising price of meat during the last five years, until it has reached a point that has not been attained since 1813.

"I have reason to suppose that, had not thousands of half-fatted cattle and sheep been slaughtered through the fear of losing them by the Cattle Plague, and thus kept down the meat market, the price would have risen, at least, twopence per pound higher. These animals the farmer under ordinary circumstances would have grazed until next spring, and their premature slaughtering, although producing at present amelioration of prices, must necessarily augment the future evils, and meat may very reasonably be expected to reach a famine price unless every encouragement be given to its production, and every restriction upon it removed.

"I am enthusiastic enough to believe that, if my plan were allowed a free and fair trial, the danger of so disastrous a result to a flesh-eating population like our own would be to a great extent removed. There cannot be a question upon the cheapness of the food recommended, as compared with the artificial foods which have hitherto been so extensively used. For example, cotton cake, during the last four years, has varied in price from £5 to £6 per ton. Most of the cake I have examined contained from 60 to 80 per cent. of impurities, and the analysis of Professor Voelcker shows a similar result. Wheat has been selling during the last four years at £7 10*s.* per ton, but if the expense of carriage be deducted, as it ought to be, the price would be reduced to £7 5*s.* In wheat prepared as I have recommended we have a food much superior to pure cotton cake, at a price little exceeding the adulterated article; but in order to ascertain the comparative value of the two kinds of food it is necessary to take into account the adulteration, and the cost of the nutritive portion of the cake, supposing the impurities not to exceed 50 per cent., a very rare condition, would be £12, or 50 per cent. above the material which every farmer has ready at his hand.

"Barley has been selling during the same period, at £6 5*s.* per ton, which gives even more favorable results. This is without taking into account the loss of cattle arising from the use of impure cake; one farmer in this parish recently lost eight head of cattle from the use of it, and all others that fed upon it were seriously depreciated in value, and I could mention numerous other instances of like loss.

"That I have some title to be heard upon this question, I may mention that, besides the experience which I have gained in my practice before alluded to as a veterinary surgeon, it has been the subject of my especial study. During the two successive years 1854-5, the Royal Agricultural Society awarded me first prizes for essays on diseases and management of sheep; during the years 1856-7, eight letters of mine, on the sanitary condition of farm premises and hygienic management of breeding herds, appeared in the 'North British Agriculturist;' and seven others have appeared in different Agricultural and Veterinary Journals during the last three years, on the following subjects: 'The Grazier's Difficulties,' 'Chemistry of Cattle Food,' 'Nitrogenous or Albuminous Principles of Food,' 'Malt as Food for Cattle,' 'Malt, its Value for Feeding Purposes,' 'Is it a Fallacy to Feed Cattle on Malt?' 'Mode of Saccharizing Grain.'*

"I earnestly hope that my want of force to give adequate expression to the subject which I have advocated in this letter, will not prevent its receiving the weighty consideration at your hands which the importance of it merits, and I am satisfied that the thorough ventilation of it after due inquiry will lead to some plan being devised which, while the restriction is removed upon the farmer in the use of his own produce as food for his cattle, to the great advantage of himself and the whole community, will not impair the public revenue.

"I have the honour to remain, Sir,

"Your most

"Obedient and humble servant,

"Isaac Seaman."

THE PROPOSED NEW VETERINARY ACT.

By John Barker, M.R.C.V.S., Bolsover.

Gentlemen,—Seeing that only one member of the profession took up this subject in your last impression, I deem it my duty

* The last seven letters, with other additional matter upon the subject, with the Chancellor of the Exchequer's correspondence, is now in the hands of the printer for publication.

to direct further attention to the question, and to endorse the arguments so nobly put forth by Mr. T. D. Gregory. I would address myself more particularly to those who are located in country districts practising their profession in all its branches, and not confining their attention to the horse, like some, regardless of the stigma attached to us by our being only supposed to understand equine pathology; as witness the universal outcry throughout the length and breadth of the land at the little attention which has been paid to the treatment and diseases of cattle by the profession as a body since the rinderpest panic.

Under the existing state of things, however, no one ought to blame the profession, who really understands the difficulties which beset a young man while trying to establish himself in a general country practice. These difficulties may be referred not only to the ignorance and audacity of pretenders to the veterinary art, but also, in many cases, to the more culpable ignorance of employers themselves. With shame be it said, there are many landowners, titled and otherwise, who have lately subscribed great sums of money to the various insurance funds, who take no interest in knowing who has the medical care of their cattle and that of their tenants, on their various estates and farms. There are others who "agist their parks" in this part of the country, and who leave all to the caprice and whim of some ignorant farm bailiff or park keeper, who selects his man from the same class as himself, and contracts with him to attend twice a week during the summer months at the rate of one shilling for each animal.

I hail with delight the efforts that are about to be made for the obtainment of a new veterinary medical act; but at the same time I hope every individual member of the College will do his part to alter that objectionable fourth clause. I consider that if Mr. Gregory's proposition is made law, it would not only be a boon to us as a body, but also to our employers and the public at large. It perhaps should be made known to those persons at present practising without a diploma, that the act would not take effect until the lapse of a stipulated time (say six months) after the passing of it, so that they might have time to read up and prepare themselves for the necessary examination. The ordeal need not be made either expensive or too severe. Those who would not abide the issue should not be allowed to continue in practice any more than fresh comers should be allowed to join the ranks. The naming a fixed period would give many a second chance who might be unsuccessful on their first trial; and I cannot think that any one could view this as a hardship on a certain class of men. That we should retain a number of this class no one, I think, will venture to deny, till the College turns out a sufficient quantity of graduates to effectually undertake the varied practice

of an agricultural district by locating themselves in small towns or large villages.

As regards the present evil, allow me to ask if some of our great lights in the metropolis and elsewhere are blameless in the matter, who employ grooms, farriers, &c., as "running doctors," and even leave the treatment of many cases in their hands, when many young men who have served an apprenticeship would be glad of such opportunities of seeing "tonsure practice?" I would ask, what becomes of these "running doctors?" Is it not reasonable to suppose that they go to swell the list of clever grooms, farriers, &c.; even some, no doubt, dub themselves veterinary surgeons. Let me illustrate this position by taking the case of that noblest of all animals, the thorough-bred race horse. We all know, when we read in the sporting papers that such and such a horse has died of inflammation, what sort of medical treatment he is subjected to in nine cases out of ten. What an ambiguous term is inflammation. It is only very lately that the noted sire Ivan, who had just cost his noble owner 900 guineas, was lost because two veterinary surgeons were called in too late to be of any use.

In conclusion, I would suggest that in future all students, before entering the College, should pass a preliminary examination, or, at all events, have seen some practice as apprentices or otherwise. As matters now stand, many who get a diploma possess knowledge of a purely theoretical character, which does not cloak their want of experience before their employers, who are generally men that adhere to the old adage, that one ounce of practice is worth a bushel of theory.

Doubting not that you will pardon me for speaking so candidly on this subject, and hoping that others will come to the rescue,

I am, &c.

To the Editors of the 'Veterinarian.'

Connected with this subject the following letter has been received from Mr. F. Blakeway, M.R.C.V.S.:

Dec. 20th, 1866.

"GENTLEMEN,—In your last number Mr. Gregory writes, to me, a very sensible article respecting the proposed new Medical Bill. I cannot think the Council have fully weighed Clause No. 4, or they must be aware how objectionable, and even unjust it would be to members of the College, 'particularly country members.'

"I endorse every word uttered by Mr. Gregory, and shall feel it a duty in the present state of this Clause to oppose it with all my influence. "I am, &c."

To the Editors of the 'Veterinarian.'

Another correspondent, "CON," writes as follows:

"GENTLEMEN,—In perusing your valuable Journal, I perceive that a '*new Veterinary Medical Bill*' is being prepared; and it would seem, if one may judge from the tone of some few members of the profession, that the Bill should be formed, so as to sweep away, as it were, at one stroke, every person who does not hold a diploma from the Royal College of Veterinary Surgeons.

"Now, Sirs, I hope, and indeed I cannot but believe, that those who are entrusted with the construction of the said Bill, as well as the majority of the members at large, are actuated and ennobled by a far more just, kind, and Christian motive, than to entertain any such idea. It is well known that there are at the present time a great many very respectable, persevering, and skilful men, practising veterinary medicine, who do not hold diplomas (I am not alluding to such persons as 'grooms, coachmen, blacksmiths, shepherds, cow-men,' and other illiterate persons, who have 'forgot a great deal more than these *vetinary* gentlemen ever learnt'), but to men who have received a fair education, and who have been, perhaps from boyhood, stimulated by a desire to practise veterinary medicine; men who, from observation, investigation, and study, have acquired that knowledge which Professor Varnell, in the Opening Address this Session, so aptly urged upon the consideration of the students, when he said, 'And it is only by making himself thoroughly acquainted, as far as possible, with the laws of health or hygiene, that the veterinary surgeon can hope to render good service,' &c.

"Now, it should in fairness, I think, be remembered, that a great many of the men who are practising without diplomas, are thoroughly conversant with those important laws, and who would perceive at a glance the slightest disturbance of them. These persons are not from the shops of carpenters, shoemakers, linen drapers, &c. They are men, as I have before said, born and bred amongst the very animals they are called upon to treat; not, however, without having first acquired a sufficient amount—for all practical purposes—of anatomical, physiological, and pathological knowledge, as also of chemistry, &c., and who possess much more practical experience than many are aware of, or feel inclined to give them credit for. That such persons are doing good service to the agriculturist and others, and are no disgrace to the veterinary profession, I think must be admitted. Indeed, the fact is demonstrated in many instances, by the high patronage which they receive, and the satisfaction they give the public.

"It is admitted that a considerable number of such men are very respectable persons. And let it not be forgotten that they

have (a great many of them) wives and large families, entirely depending upon their industry, and that they have (very many of them, at all events) no other calling to fall back upon. Would it not then be very unjust, and a want of Christian charity, to have recourse to measures having for their object the depriving of such persons of the only calling they have, and consequently rendering them and their families helpless and destitute?

"I would humbly submit that those who can be proved to be respectable, having been in practice, say, five or ten years, and are keeping a horse and chaise as facilities for performing their professional duties, aud are carrying on no other trade or calling (which would, I think, show to some extent that their abilities are appreciated), should not be interfered with.

"I mention the keeping of horse and chaise, because it would exclude a host of low characters. With a deep sense of the trouble I am imposing upon you in asking you to give insertion to this letter, "I am, Gentlemen,

"Your humble obedient servant, "CON."

To the Editors of the 'Veterinarian.'

A FOURTH correspondent thus addresses us:

GENTLEMEN,—Will you kindly insert the following in your valuable Journal?

As an old member I beg to offer an amendment to Clause 4 of Veterinary Medical Bill, namely—That every person who shall have assumed the title of veterinary surgeon and practised as such, and who shall have publicly announced in legible letters his name and assumed title at his place of residence for five successive years immediately preceding the first day of October, 1866, and who is in actual practice as a veterinary surgeon at such date as aforesaid, in any parish, town, or city in England, shall be entitled to be admitted a member of the Royal College of Veterinary Surgeons, upon payment of a fee of £5 and the usual cost of a diploma; but that all other persons who assume the title of veterinary surgeon without the aforesaid qualifications, shall be prevented so doing by a heavy penalty.

If a similar amendment to the foregoing be adopted, both our profession and the public would be protected from those designing quacks whose ignorance prevents their staying long in one place; at the same time we should select a class of men well worthy of membership, and bestow on them and the public a great boon, enhancing the desires of the former and giving to the latter those only who are deserving of support.

I remain, yours faithfully, R.

THE VETERINARIAN, FEBRUARY 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE PRESIDENT'S CONVERSAZIONE.

To record the occurrence of any incident interesting to the veterinary world is not only our duty but also our pleasure, and we beg to assure the profession and our subscribers generally that the chronicling of few events has given us greater pleasure than that which we now experience in rendering them an account of a visit we paid at the Freemasons' Hall on the 11th of last month, whither we went to "assist," as our Gallic neighbours would say, at a *conversazione* convened by Professor Varnell, the President of the Royal College of Veterinary Surgeons. Owing to unavoidable circumstances, the invitations to visitors and exhibitors were issued only a week antecedent to the holding of the *conversazione;* nevertheless, the undertaking was perfectly successful, as we shall presently endeavour to show by giving a programme of the evening's entertainment, and a recital of the sentiments expressed by those who were present.

The proceedings commenced at seven o'clock, p. m., by Professor Simonds delivering a comprehensive, able, and highly interesting lecture on the cattle plague, which was most patiently listened to during the hour and a half occupied in its delivery. An abstract of the Professor's lecture will be found in another part of this number of the Journal. At the termination of the lecture the visitors were invited by the President to inspect the various specimens, works of art, &c., displayed around the room, about some of which we proceed to say a few words. Passing down the room from the left of the platform, we met with an extensive series of most beautiful drawings and wax models taken

from nature, and illustrating some of the symptoms and *post-mortem* appearances observed in animals affected with cattle plague. These drawings and models were executed by H. B. Tuson, Esq., and exhibited by the kind permission of R. Ceely, Esq., Professor Spooner, and other members of the Royal Commission, by whom Mr. Tuson has been for a long time actively engaged. Mr. H. B. Tuson likewise exhibited a series of drawings of the successive phases which he had noticed as occurring in the incubation of the chick, as well as some pictorial representations of the vesicle on the hand of Mr. Hancock, who it will be remembered is believed to have been inoculated with the virus of rinderpest. From this collection, which was highly admired by all present, we passed on to the display of microscopic, spectroscopic, and stereoscopic objects furnished by Mr. Charles Heisch (nominally by Messrs. Murray and Heath) of Piccadilly. Among the many interesting things contributed by this gentleman we, and the visitors generally, were particularly struck with the stereoscopic views, one hundred in number, of the most interesting places in France, Germany, Switzerland, Italy, &c. These stereo-photographs excel in beauty and sharpness anything of the kind we had hitherto seen. Leaving Mr. Heisch, we made acquaintance with his neighbour for the evening, Mr. Baker of Holborn, whose microscopic preparations of flesh containing specimens of *trichina spiralis*, and whose mounting of the toe of a rodent, fully deserve "special mention."

Next came Messrs. Burgess, Willows and Willows' collection of chemicals and drugs, which, independently of the taste displayed in its arrangement, attracted great attention from its being formed of specimens possessing such qualities as reflect great credit on the judgment of the gentlemen by whom they were selected.

On the walls were hung some exquisite photographs kindly sent by Mr. Heath and Messrs. Maule and Polyblank.

H. Slack, Esq., Messrs. Bullock and Reynolds, Messrs. Arnold and Son, and others, exhibited objects and instruments which were viewed with interest.

During the earlier part of the day those who took part in carrying out the necessary arrangements feared that the existing bad weather would keep numbers of visitors away; when evening came, however, such fears proved to be in the main groundless, for, although there was a cold drizzling rain falling, and the streets were covered a foot and more in depth with melting snow, and notwithstanding that travelling was so much impeded that two horses instead of one were required to draw the cabs, the room in which the *conversazione* was held was well filled with metropolitan and provincial veterinary surgeons, with members of the profession of human medicine, and with representatives of many departments of science and art. It was extremely pleasing to notice the many knots or groups into which the visitors arranged themselves so that they might hold "sweet converse" on matters professional, and pleasantly discuss problems scientific. Here would be seen two men heartily shaking one another by the hand, and renewing a friendship possibly made at college ten, twenty, thirty, or more years ago. There would be seen men who, until that night, knew each other by name only, but who took the opportunity of forming a personal acquaintance and of mutually exchanging information and experiences. In fact, so much pleasure was produced on the occasion that the wish was expressed on all sides that the kind of entertainment in which they were then taking part might become a permanent institution, and that future Presidents would follow the example revived, if not absolutely set them, by Professor Varnell. It seems to us that the duties of President towards the body of the profession may, from his position, his years, and his lengthy experience, be compared in some respects to those which a father should exercise towards his children. A wise and liberal-minded father takes every opportunity of providing his family with wholesome and instructive amusement, and so also should the President of every important society avail himself of every opportunity of securing a free and friendly intercourse between the members of the body over which he presides. That Professor Varnell, during his period of office, has fulfilled his duties in these respects all,

we believe, will readily admit; and we shall be much surprised if, before he resigns his post to a successor, he does not again give the members of the veterinary profession, and those of other intellectual and scientific bodies, the opportunity of eradicating any prejudices they may mutually entertain, and of participating in the pleasure and profit which must accrue from an intimate knowledge of our fellow-men.

The following abstract of Professor Simonds's lecture is taken from the daily press:

Professor Simonds, who was received with applause, said that at the request of the president he had the honour of addressing the meeting on a subject which more or less interested all classes of the community—he alluded to that destructive disease which was decimating our flocks and herds—namely, the cattle plague. An occasion like the present might be thought a fitting opportunity to descant on the advantages springing out of a *réunion* of the members of the medical and veterinary professions; but he believed he should best consult the feelings of the meeting if he desisted from any attempt of the kind, and proceeded at once to the subject-matter of the address. He would first say a few words on the history of cattle plagues. The first mention extant of any disease of the kind is in holy writ, where a grievous murrain is described as having fallen amongst the cattle of the Egyptians—a plague which attacked horses, asses, oxen, and sheep. Homer, whose poetic imagery is 900 years before the Christian era, alludes to the ravages of the cattle disease in Greece. Virgil and Ovid also mention a cattle disease. Columelle, too, describes the frequent outbreak of disease in Italy; but its nature is not well known, the description being inaccurate. In 810 great loss prevailed in the dominions of the Emperor Charlemagne, in Germany. In fact, that disease resembled the one now ravaging England. Then came the dark ages, about which little is known; but after the revival of the arts and sciences, historians noticed these outbreaks in the fifteenth century. Italian writers make mention of the disease. In 1514 the council of Venice forbade beef and veal to be eaten. In 1599 another outbreak took place in Italy, and spread into surrounding countries. In 1682 a disease broke out in Switzerland, Wurtemburg, and the borders of Italy. The cattle attacked usually died within twenty-four hours—a noxious exhalation of blue mist settling on the pastures being the alleged origin of the malady. In 1691 the smallpox attacked sheep, and in 1693 a pulmonary disease broke out among cattle. In 1712 the present cattle disease was very prevalent on the Continent, and spread into England—the animals attacked dying about the fourth or fifth day. In 1714 it was introduced again—probably from

Holland—reached Islington, and spread into the neighbourhood of London. Mr. Bates, surgeon to the household of George I., gave early attention to the disease. In 'Philosophical Transactions' Mr. Bates gave a paper, entitled 'A Brief Account of the Contagious Disease which raged among the Milch Cows near London in the year 1714, and of the methods that were taken for suppressing it.' Mr. Bates states, "About the middle of July the distemper appeared at Islington, and thereupon their excellencies the Lords Justices, having notice of it, were pleased to command that I should examine into the truth of the report of its being contagious, and ordered the Lord Harcourt, then Lord High Chancellor, to grant such authority as would be proper to make the discovery. Accordingly Mr. Milner, Mr. Offley, Mr. Richardson, and Mr. Ward, four justices of the peace for the county of Middlesex, were appointed to make the necessary examinations. Pursuant to those orders, we went to Islington, where Mr. Ratcliff had lost 120 out of 200; Mr. Rufford 62 out of 72; and Mr. Pullen 38 out of 78. They were very unwilling to own it, because so soon as it should be known none would buy their milk; but Mr. Ratcliff, a man of good judgment in cattle, after much persuasion gave us the following account, viz., that they first refused their food, the next day had huskish coughs, and voided excrements like clay; their heads swelled, and sometimes their bodies. In a day or two more there was a great discharge of mucous matter by the nose, and their breaths smelled offensively. Lastly, a severe purging (sometimes bloody), which terminated in death. That some died in three days, and others in five or six, but the bulls lived eight or ten. That during their whole illness they refused all manner of food, and were very hot." Now, as to the method adopted for a cure, Mr. Bates made a report to the Lords Justices of what he considered ought to be done. He proposed that all diseased cows be "bought, killed, and burnt, or at least that the sick be burnt, and the well kept and secured on the grounds where they now are—that such of them as sicken or die of this distemper may be burnt." Thus the disease was stamped out. It ravaged the district from July to Christmas, destroying in that time 5418 full-grown beasts and 439 calves. Later still, in 1745 and 1747, the greatest outbreak occurred in England, and the government of the day paid for the loss of the animals out of the public purse, the sum being £135,000. There was another outbreak in 1769, which lasted only a year. In 1770 George III. referred to the disease in his Speech from the Throne. It might be mentioned that the Privy Council, being informed of an essay by Dr. Layard—who wrote upon the cattle plague which visited England in 1744 to 1756—and of his residence in London, applied to him for his advice and assistance. He was consulted in the drawing up of those orders of council and acts of parliament which, being put into immediate execution, stopped the spreading of the contagion, and totally extirpated it in less than six months, at an expense of £3000. The result of Dr. Layard's services consisted—1. In ascertaining his opinion, formed in 1756,

that the distemper among the horned cattle was similar to the small-pox in the human body; to be managed with the same intentions and communicated in like manner as that illness and as the plague. 2. That by killing the cattle without effusion of blood—by strangling them and burying them deeply with their whole skins, and avoiding communication of persons and beasts, are the surest means of extirpating the calamity. 3. That by inoculation the sound cattle may be preserved, as is positively confirmed by the great success in Denmark and other places; but that such practice is not to be allowed except when the contagion is become general in any country. 4. That the utmost attention is requisite to prevent the admission of infected cattle, hides, hay, straw, or cloth packages, from foreign countries, lest that illness become naturalised and fixed in these kingdoms, as in Holland during many years, which has ceased in Europe since 1780. 5. That the variolous contagion is a different disease from the gullsey, which is a putrid sore throat natural to and common in Great Britain and Holland, as Dr. Layard observed in 1788. Passing from that period to the present time, the speaker adverted to the prevailing infliction, and, exhibiting a map of Europe, which contained a line descriptive of the plague-stricken countries from the Baltic to the Adriatic, he traced the origin of the existence of the pest to Hungary; and as this country derived supplies of cattle from almost every nation in Europe, it was possible an inferior type of the disease might have been brought from Northern Poland, Lithuania. He told the meeting to bear in mind, however, that for two or three years disease existed to a great extent in Hungary, and that a cordon had been drawn round all the affected provinces of Germany. It would be scarcely possible for the disease to come from Holland. In fact, there was only one place to fix upon as the cause of the present epidemic in this country, and that was Russia. Why, there was the remarkable fact that cattle had been traced as shipped from the port of Revel, in the Baltic, landed at Hull, and brought to the London market. He entirely ignored the theory of spontaneous infection; and with respect to dissemination of the disease, he considered there was plenty of proof that it went from London to Norfolk, to Shropshire, and to Edinburgh. It also found its way to Sussex, Kent, and Hereford, the various instances being fully described by the lecturer. He next showed that the sources of danger also arose from the conveyance of hides from one place to another, as in the Taunton outbreak, which arose in consequence of a quantity of skins having been brought to a tanwork from Bristol; that contagion began in districts by the conveyance of manure, amongst which were portions of dead animals, from London to the country; and that it sometimes arose from improper burial of dead animals in fields, where often a thin layer of earth covered the diseased carcases, that lay, perhaps, adjoining some trickling stream which carried the infection lower down its course. He considered that hunting in infected districts was a cause of spreading disease—hounds running through pasture lands, which contained the excreta

of infected animals, being a very likely medium of propagating the plague. It could also be propagated through the medium of birds—starlings being notorious for their habit of perching themselves on the backs of sheep. He was aware that farmers were large breeders of pigeons, which were apt to fly from one place to another in picking up their food. It had happened that disease had been communicated from one farm to another in a very mysterious manner, until it was discovered that large numbers of pigeons got their feet and legs covered with excreta in cattle-yards, and afterwards visiting one place after another while feeding. The cause of spreading the disease, in short, might be a puzzle, but it could not be traced to a spontaneous origin. In regard to preventives the professor alluded to inoculation and vaccination by diluted virus, but contended that the ox was insusceptible to those modes of treatment. Having shown that goats, deer, and antelopes were susceptible of diseases, and gone fully into the pathological treatment of the question, the professor argued that medical treatment of the disease was the most fruitful means of keeping it in this country, and was now the chief source of danger. The policy of proprietors was to stamp out the disease by prompt and decisive agency; and he earnestly contended that the only way to get rid of this decimating plague was by disinfection and isolation. In the veterinary department of the Privy Council Office the returns up to the 11th current did not give the total number of cases which had occurred in Great Britain, but only those which had been ascertained from the official information received from the inspectors in the several diseased districts. The number attacked for the week ending January 6 was 9120. The total loss in the Metropolitan police district since June last was 15,757; and in the Board of Works district, 9730. In conclusion, the professor, amid loud applause, urged the members of the veterinary profession to do their duty to rid England of this desolating plague.

On the motion of the President, a cordial vote of thanks was tendered to Mr. Simonds, for his very instructive lecture.

Extracts from British and Foreign Journals.

THE CATTLE DISEASE OF 1714.

As everything relating to former visitations of the contagious disease of cattle, with which the country is now afflicted, possesses an interest far beyond that ordinarily attaching to such a subject, we have been induced to reprint the following descriptions of the malady of 1714, which we have recently met with.

This disease, which had prevailed in several parts of Italy from 1711, proving fearfully destructive to the cattle, reached Piedmont in 1714, where, writes Mr. Youatt, "apparently increasing in malignity, it swept away, according to Fanteni, Professor of Medicine at Turin, upwards of 70,000 cattle."

"From Piedmont, it easily found its way into France. All the provinces of the south of France, and bordering on Germany, were devastated by it. And now its progress was rapid and murderous to a fearful degree; for before the end of the year it had reached Brabant and Holland, in the latter of which at least two hundred thousand cattle perished; and it had crossed the channel to England, where it was as destructive as on the Continent; but of its history and specific character in Britain there is not any authentic record."*

It would appear, however, that more is left on record regarding this visitation than Mr. Youatt seems to have been aware of—thus, in the *thirtieth vol. of the Philosophical Transactions, for the years* 1717, 18, *and* 19, will be found a paper replete with important particulars, "*communicated to the* Royal Society *by* Thomas Bates, *Esq., Surgeon to His Majesties Houshold, and* R. S. S." Other particulars, not less interesting, are also to be found in a pamphlet on the 'Plague at Marseilles,' by Richard Bradley, F.R.S., third edition, 1721; and in a work by Dr. Theophilus Lobb, entitled 'Letters relating to the Plague and other Contagious Distempers,' 1745.

We now reproduce the first of these, and intend, in our next number, to do so with the others.

* "Cattle," 1834, p. 385.

"*A Brief Account of the Contagious Disease which raged among the Milch Cows near* London, *in the Year* 1714. *And of the Methods that were taken for suppressing it. Communicated to the* Royal Society *by* Thomas Bates *Esq.; Surgeon to His Majesties Houshold, and* R.S.S.

"ABout the middle of *July* the Distemper appeared at *Islington*, and thereupon their Excellencies the Lords Justices having notice of it, were pleased to Command that I should examine into the truth of the Report of its being Contagious; and order'd the Lord *Harcourt*, then Lord *High Chancellor*, to grant such Authority as wou'd be proper to make the Discovery. Accordingly Mr. *Milner*, Mr. *Offley*, Mr. *Richardson*, and Mr. *Ward*, four Justices of the Peace for the County of *Middlesex*, were appointed to make the necessary Examinations.

"Pursuant to those Orders we went to *Islington*, where Mr. *Ratcliff* had lost 120 out of 200; Mr. *Rufford* 62 out of 72; and Mr. *Pullen* 38 out of 87. They were very unwilling to own it, because as soon as it should be known, none wou'd buy their Milk; but Mr. *Ratcliff*, a Man of good Judgment in Cattle, after much perswasion, gave us the following account, *viz.* That they first refused their Food; the next Day had Huskish Coughs, and voided Excrements like Clay; their Heads swelled, and sometimes their Bodies. In a Day or two more there was a great discharge of a Mucous Matter by the Nose, and their Breaths smelled offensively. Lastly, a severe Purging (sometimes Bloody) which terminated in Death. That some died in three Days, and others in five or six, but the Bulls lived eight or ten. That during their whole illness, they refused all manner of Food, and were very hot.

"We then advised with several of the *Cow-leeches*, or Doctors, who all agreed that it was a Murrain, or rather a Plague; and that the Methods they had tryed for a Cure, had proved unsuccessful. This Disease was so surprising, that some of those Men who used to look after them, were afraid to go near them.

"We then ordered some of the sick Cows to be Housed, and several sorts of Cattle to be kept with them, to see whether the Contagion would affect any other Species.

"The next Day I made a Verbal Report to their Excellencies, of all the several Opinions and Discourses which I have had about it, and left them debating what Method to take; at last I was called in, and Ordered to consider of it

again the next Day, and to deliver to them in Writing what would be proper to be done. Accordingly I drew up, and gave them the following Proposals.

"I. That all such Cows as are now in the possession of Mr. *Ratcliff*, *Rufford*, and *Pullen*, be Bought, Kill'd, and Burnt: or, at least, that the Sick be Burnt; and the Well kept and secured on the grounds where they now are, that such of them as Sicken or Dye of this Distemper may be Burnt.

"II. That the Houses in which those Sick Cows have stood be Washed very clean, and then smoaked by the burning of Pitch, Tarr, and Wormwood, and be kept three Months at least before any other Cows are put therein.

"III. That the Fields where those Sick Cows have Grazed, be kept Two Months before any other Cows are suffered to stand or Graze thereon

"IV. That the persons looking after such as are Ill, shou'd have no Communication with those that are well.

"V. That the same Methods be Observed if any other of the Cow-keepers shou'd get this Distemper among them; and that they be all Summoned and told, that as soon as they perceive any of their Cows to refuse their Meat, or have any other symptoms of this Distemper, that they immediately separate them from their others, and give notice to such Persons as your Excellencies shall appoint, that they may be Burnt; and the places where they have stood or Grazed to be ordered as before.

"VI. That the Cow-keepers be required to divide their Cows into small Parcels, not more than ten or twelve in a Field together; and that they be allowed such satisfaction for complying with these Proposals, as your Excellencies shall think fit; all which is most humbly submitted, *&c.*

"The next day their Excellencies consulted the four Gentlemen before-named, and gave them Orders to comply with the preceding Proposals, and to allow *Forty Shillings* for every Sick Cow which they Burnt, that belonged to Mr. *Ratcliff*, *Rufford*, and *Pullen*; but the free intercourse which both Masters and Servants had had with each others Cows (before we were appointed) had spread the Contagion; and the Disease began soon to appear in several other Neighbouring places.

"The Gentlemen then summoned all the Cow-keepers in the County, and acquainted them with the above-named Proposals (to most of which they readily Complyed, as being visibly their interest) and offered them *Forty Shillings* for

every Cow which they Burnt, that had not been Sick above twenty-four Hours; but for such as had been longer Ill, or were Dead, they wou'd allow them only the value of their Skins and Horns.

"Some of the Cow-keepers appeared not content with this Regulation, and believing that the Disease would become general, design'd to have sold their Cows at some distant Market; which the Gentlemen having notice off, appointed several Butchers to Watch near their Grounds, and count their Numbers every Morning, with Orders to follow such as they sent to any Market, and prevent their being sold, by telling the people what they were.

"Another great Obstacle at the first was the Cow-keepers not owning the Disease, till they had lost several of their Cows; for so soon as it was known that any Man had but one Sick, none wou'd buy his Milk; and to those who kept many Cows, that loss was considerable.

"Nor was there ever wanting one or other who gave them hopes of a Cure.

"To obviate these three difficulties, the Gentlemen encouraged them to hope for a Brief, but assured them that such only as complyed with these Directions, shou'd have any benefit by it. Accordingly they ordered a daily account to be taken of the Conduct of each Cow-keeper, and allowed or disallowed their pretensions to this Brief, as well as to the *Forty Shillings per* Cow, as they complyed or disregarded these Directions.

"This had a pretty good effect; but here in *England*, where every Man is at liberty to dispose of his Cattle as he pleases, nothing but making them sensible that it was each Mans particular interest to comply with these Methods cou'd do; this, tho' true in fact, yet the Reader will readily judge to be very difficult among such a Number; but the Gentlemen spared no labour to accomplish it; for that purpose they summoned them once or twice every Week, urged all that cou'd be said to induce their Complyance, and omitted no warrantable means to frustrate their Folly.

"I had Orders from the beginning to assist those Gentlemen with my Advice, which I did at most of their Meetings; as also to make a stricter enquiry into the Disease by Dissections, *&c.*

"Accordingly I discoursed the *Cow-leeches* about the Customs and Diseases that Cows were subject to, and consulted such Books as treated of them; but concerning this Disease, I cou'd gain but small assistance from either.

"I then made Dissections of sixteen Cows, in different

degrees of Infection; and found the Putrefaction of their *Viscera* to encrease, in proportion to the time of their Illness.

"The first five that I opened, had hearded with those that were Ill, and the Symptoms of this Distemper were just become visible; in these, the Gall-bladders were larger than usual, and filled with Bile of a natural Taste and Smell, but of a greener Colour. Their *Pancreas*'s were shrivelled, some of the Glands obstructed and tumified. Many of the Glands in their *Mesenterys* were twice or thrice their natural bigness. Their Lungs were a little inflamed, and their Flesh felt hot. All other parts of their *Viscera* appeared as in a healthful State.

"The next six that I opened, had been ill about two Days; in them the Livers were blacker than usual, and in two of them, there was several Cysts filled with a Petrified Substance like Chalk, about the bigness of a Pea. The Gall-bladders were twice their usual bigness, and filled with Bile of a natural Taste and Smell, but of a greener Colour than the first. Their *Pancreas*'s were shrivelled, some of their Glands very large and hard, and of a blackish Colour. The Glands in their *Mesenterys* were many of them five times their natural Bigness, and of a blackish Colour. Their Lungs were inflamed, with several small Cysts forming. Their Intestines were full of red and black Spots. Their Flesh was very hot, tho' not altered in Colour.

"The five last that I opened, were very near dying, in them I found the Liver to be Blackish, much Shrivelled and Contracted, and in three of them, there was several Cysts as big as Nuts or Nutmegs, filled with a Petrified Substance like Chalk. Their Gall-bladders were about three times their usual bigness, and filled with Bile of a natural Taste and Smell, but of a deep Green Colour. Their *Pancreas*'s were Shrivelled and Contracted, many of their Glands very large and hard, and of a black Colour. The Glands in their *Mesenterys* were many of them distended to eight or ten times their natural bigness, were very Black, and in the *Pelvis* of most of those Glands in two Cows, there was a yellow Petrefaction, of the consistence of a sandy Stone. Their Intestines were the Colour of a Snake, their inner Coat excoriated by Purging. Their Lungs were much Inflamed, with several Cysts containing a yellow Purulent Matter, many of them as big as a Nutmeg. Their Flesh was extream hot, tho' very little altered in Colour.

"I have here only given you a general account of my Dissections, in the three different Stages of the Disease; for as the difference was but small, and the Disease incurable, it could

neither be useful nor pleasant to the Reader, to have each particular Dissection at large, tho' I have now the Minutes by me. But the following Cases being very extraordinary, I could not omit the mention of them, *viz.* In one of them the Bile was Petrified in its Vessels, and resembled a Tree of Corral, but of a dark yellow Colour, and brittle Substance.

"In another there were several Inflammations on the Liver, some as large as a half Crown, cracked round the Edges, and appeared separating from the sound part, like a Pestilential Carbuncle.

"In a Third, the Liquor contained in the *Pericardium* (for Lubricating the Heart in its Motion) appeared like the subsidings of *Aqua Calcis;* and had excoriated, and given as yellow a Colour to the whole Surface of the Heart and *Pericardium*, as *Aqua Calcis* cou'd possibly have done.

"In giving my Opinion of this Distemper, I must beg leave to premise, that all Cows have naturally a Purgation by the *Anus* for five or six Weeks in the Spring, from (as the Cow-keepers term it) the frimness of the Grass; during which time they are brisk and lively, their Milk becomes thinner, and of a blewish Colour, sweeter to the Taste; and in greater Plenty: but the Spring preceeding this Distemper, was all over *Europe*, so dry, that the like has not been known in the Memory of any one living; the consequence of which was little Grass, and that so dry and void of that frimness which it has in other Years, that I could not hear of one Cow-keeper, who had observed his Cows to have that Purgation in the same degree as usual; and very few who had observed any at all. They all agreed that their Cows had not given above half so much Milk that Summer as they did in others; that some of them were almost dry; that the Milk they did give was much thicker, and yellower than in other Years. It was observed by the whole Town, that very little of the Milk then sold wou'd Boyl without turning; and it is a known Truth, that the weakest of the common Purges you can give a Cow entirely takes away her Milk; from all which Circumstances, I think it evident, that the want of that natural Purgation was the sole cause of this Disease; by producing those Obstructions, which terminated in a Putrifaction and made this Distemper Contagious.

"During my daily Conversation at that time with Cow-keepers, *&c.* there occurred many other Circumstances of less Moment, to confirm me in this Opinion: but as there was no one reason to give me the least notion of any other Cause, I shall not trouble the Reader with a useless detail of them.

"Cows are likewise subject to a Purgation (tho' in a less degree) from the same quality in the Grass, about the latter end of *September;* which is called the latter Spring; and which I believe contributed not a little, to the preventing the encrease of this Distemper; for this Purgation coming so soon after the Disease appeared, it is not unreasonable to suppose, that it freed such Cows as were not much injured, from the ill effects of those Obstructions, occasioned by the want of their Vernal Evacuations.

"Several Physitians attempted the Cure, and made many Essays for that purpose; but the Dissections convinced me of the improbability of their succeeding, with which I acquainted their Excellencies. However they having received the following *Recipe* and Directions from some in *Holland,* said to have been used there with good success, gave me Orders to make tryal of it: But the effect was answerable to my expectation, for in very many Instances, I was not sensible of the least Benefit.

"*Herb. Aristoloch. Rotundæ,*
Veronicæ, aa M.viij
Pulmonariæ,
Hyssopi,
Scordij, aa M. 4.
Rad. Gentianæ,
Angelicæ,
Petasitidis,
Tormentillæ,
Carlinæ, aa ℔ ss.
Bacc. Lauri,
Juniperi, aa ʒxij. *Misce fiat Pulv.*
See *Phil. Transact.* N°. 338. *in fine.*

"This Powder is to be given in Water, one Ounce at a time, three or four Mornings successively; then rest four Days, and if the Disease continues, repeat the Powders in warm Water, as before.

"I think there is no one Method in Practice, but what was tryed on this Occasion, tho' I cannot say that any of them was attended with an appearance of Success; except that of Bleeding plentifully, and giving great quantities of Cooling and Diluting Liquids. But by this Method, the instances of Success were so few, that do not deserve any further mention.

"Their Excellencies being informed that the feeding Cows with Distillers Grains was a new Custom, and was the Cause of this Disease, gave me Orders to examine into the Truth

of it; but upon enquiry, I found it to have been the Practice of several of the Cow-keepers above twenty Years, without the least appearance of any inconvenience; and that some of those Persons who had suffered most, had never given any. Nor is there any difference between those of Brewers and Distillers, only that the latter are the dryer.

"It was likewise said, that the want of Water was the cause of this Disease, for that the Springs and places where People used to Water their Cowes, where almost every where dry; and that many were obliged to send them several Miles for Water. This might produce some Diseases, but such only as they got by the fatigue of being driven so far; for Mr. *Ratcliff*, Mr. *Rufford*, and Mr. *Pullen*, the three Persons where this Disease first appeared, had the New River Water running thro' the very Grounds where their Cows constantly Grazed, and cou'd drink at their Pleasure, and so had most of the Cow-keepers at *Islington*.

"There were at that time several other reports of the cause of this Disease, but none that had a shew of Reason.

"About the latter end of *September*, the Disease increased, and the Numbers brought to be burnt were so great, that it cou'd not be well executed; therefore it was judged proper only to bury them fifteen or twenty Foot deep: but first to make large Incisions in their most Fleshy parts, and to cover them with quicklime.

"At the same time, having notice that it was a Custom with the Cow-keepers, to send their Calves when a Week old to *Rumford*, *&c.* to be Sold; and apprehending by this means that the Contagion might be carried into the Country, I required all such as had Sick Cows, to bring their Calves to be buried; to which they readily consented, and were allowed from *Five* to *Ten Shillings per* Calf.

"In the beginning of *October*, being informed that some of the Cows in *Norfolk*, *Suffolk*, and *Hertfordshire*, had got this Disease, and apprehending that it wou'd become general; I gave in the following Report to a Committee of Council.

"The Distemper among the Cattle encreasing, and beginning to appear in several other Counties, I thought it my Duty to acquaint your Lordships, with the hazard that may attend their not being duely buried. It is the Opinion of all Authors in Physick that treat of Contagious Diseases, as well as of several of the Physitians in Town, that the Putrifaction of so many Cows as there is reason to fear will dye of this Distemper, may produce some Contagious Disease among Men; unless they are buried so deep that the Infectious *Effluvia* cannot injure the Air, which I am certain has very

seldom been complyed with, except in the Counties of *Middlesex*, *Essex*, and *Surry*, the Gentlemen employed being capable of acting in those Counties only. It is affirmed by several now living, that there was a Mortality among the Cattle, a little before the last great Plague in the Year 1665, which was imputed to the want of a due Care in burying them. And your Lordships may know of what importance it was judged by the King of *Prussia*, the States of *Holland*, and several other Princes and States, by the Care they took to publish Decrees and Placarts, commanding them to be buried upon pain of Death, or other severe penalties; and I humbly conceive it wou'd be necessary, not only to bury those which shall Dye, but that such as are already Dead may have the same Care; as also that they be buried nine or ten Foot deep at least. All which is most humbly submitted, *&c.*

"Their Lordships thought fit to defer all proceeding upon this Report, till the Distemper becoming more general shou'd make it Necessary; but I thank God that Necessity never happened, for within three Weeks or a Month after the giving in of that Report, the following particulars concurred to put an end to the Disease.

"The Cows began their latter Purging, which contributed much to prevent the Disease from appearing in fresh Places; and the Cow-keepers were convinced that the Disease was incurable.

"The knowledge of the Disease was spread all over *England*, so that none wou'd buy a Cow in the Country; and the Gentlemen prevented their being kill'd in Town, by having the Markets examined daily; and such Meat condemned as appeared Suspicious.

"They now divided their Cows into small Parcels, by which they lost only that in which the Disease happened; whereas before that Method, when one Cow got this Disease, if she had herded with One, Two, or Three Hundred (the Contagion was such) scarce one did escape.

"Those who had no Sick Cows avoided all Communication with such as had.

"They likewise found that the keeping their Cows so long when Ill, had been the chief Cause of their Loss; they therefore now brought them to be Buried on the first appearance of the Disease, before the Contagion cou'd possibly have got to any great height.

"These were the effects of the Cow-keepers dear bought Experience; but it was the indefatigable Care and Diligence of those four Gentlemen, who gave a daily Attendance, both early and late, that secured *Great Britain* from that terrible

Ravage, which was made by this Distemper in several parts of *Europe*.

"The severity of this Disease in *England* did not last above three Months; tho' it was not entirely suppressed till about *Christmas*: But in several other Countries it continued two or three Years; and I am credibly assured, that in *Holland* it now rages with as much violence as ever; and that they have lost in Cows, Oxen and Bulls, above Three Hundred Thousand.

"The Providence of God has so disposed the matter of Animal Bodies, as to render Contagious Diseases very seldom infectious to different Species; but Experience demonstrates, that Contagions may be communicated to the same Species, by touching the Woolen, Linnen, *&c.* to which the Infectious *Effluvia* of the Diseased had adhered, tho' the two Bodies should be at a very great distance; and I verily believe that more Hundreds died from the Infection, which was carried by the Intercourse that the Cow-keepers had with each other, than single ones by the original Putrifaction.

"The Nature of Contagious Diseases are but little understood, and it would neither be agreeable to my Design, nor useful to the Publick, to say more of this than what was evident: But I have been particularly careful, not to omit any thing Material, either for describing the Disease, or manifesting the Methods that were taken for suppressing it; because it is more than probable that the same Care wou'd be equally successful in any other Species of Cattle.

"The number of Bulls and Cows lost by this Disease, in the Counties of *Middlesex*, *Essex* and *Surry*, were Five Thousand Four Hundred and Eighteen; and of Calves, Four Hundred and Thirty Nine; and the Money issued for them, at *Forty* or *Ten Shillings per* Cow, *&c.* was the Royal Bounty of his Majesty, from his own Civil List: and tho' neither the four Gentlemen, nor I, made any demand for a Reward, or for Expences, yet it amounted to 6674*l.* 1*s.* 1*d.* But the entire loss to the Cow-keepers, as delivered in upon Oath, was 24500*l.* (exclusive of the 6774*l.* 1*s.* 1*d.*) tho' computed but at *Six Pounds per* Cow; which at a Medium, was not more than their Prime Cost; the dearness of keeping them near *London* necessitating the Cow-keepers to buy the very best.

"His Majesty was further pleased, on the Sollicitation of the four Gentlemen, to grant a Brief for the 24500*l.* but the many false Reports that were then industriously propagated, to lessen the value of those poor Mens losses, so frustrated that Charity, that the entire Sum Collected (the charges of

Collecting being first paid) was but 6278*l.* 2*s.* 6*d.* which on a Dividend, amounted to *Five Shillings* and *Three Half Pence* in the Pound, computing their Loss as above, at *Six Pounds per* Cow; tho' if we consider their Contracts with Brewers for Grains, their Rent of Grounds which lay useless, Servants wages, *&c.* their real Loss may (by a modest Computation) be allowed to be *Ten Pounds* for every Cow that died.

MINUTES OF THE PROCEEDINGS OF THE PRIVY COUNCIL RELATIVE TO THE CATTLE DISEASE OF 1714.

We have been permitted to make the following—

Extracts from Privy Council Register from 1st Aug., 1714, to 2nd March, 1716.

{At the Court at St. James's, the 22nd Novr. 1714.}

Memorial of Thos. Bates, Surgeon, touching y^e^ mortality of Cattle, Referred to a Committee.

Upon reading this day at the Board a Memorial of Thos. Bates Surgeon touching the Mortality among Cattle and Representing how necessary it is that such Cattle as dye thereof be buried deep, to prevent any infection in the Air, which if neglected may affect Humane Bodies.

It is ordered by His Majesty in Council. That the matter thereof Be, and it is hereby Referred to a Committee of the whole Council to consider the same and to Report to His Majesty what Their Lordps conceive fit to be done therein.

{At the Court at St. James's, the 6th day of Decr. 1714.}

Justices of y Peace to continue to keep acco^t^ of y^e^ Cattle that shall die of y^e^ Infection.

Upon reading this day at the Board the humble Petition of Divers Cowkeeprs of Newington in the County of Surry, Setting forth the great Losses they have Sustained by the infection, that has for Some time Raged and Destroyed great Numbers of their Cows; and praying relief therein, pursuant to a Signification from the late Lords Justices; His Maty in Councill takeing into Consideration, That the Bounty allowed for infected Cows, would if Continued, Amount to an Excessive Sum; And that it had not produced the Effects hoped from it: Is pleased to Order

That the Lords Commrs of the Treasury Do take Care

that no further Allowance be made for any Cows, that shall Dye after the 8th inst. But his Maty intending to Consider of a proper Method for the relief of the petrs and other the like Sufferers (who Shall bury their Cattle, and Comply with such other necessary Directions as they receive from the Justices appointed to take care thereof) is pleased hereby to Order, that the Justices of the peace do Continue to take Exact Accounts of all Cattle, that shall dye of the said Infection, And be bury'd in a Sufficient Depth of Earth; and shall return the same accordingly: And that they take all other proper methods to prevent the Spreading of the said Infection.

{ At the Court at St. James's the 29th of March, 1715 }

Patent granted for Collecting Charity for Cowkeepers.

Upon reading this day at the Board the Petns of Severale Cowkeepers in the Counties of Middlesex and Surry in behalf of themselves and other Sufferers by the late Mortality among Cattle, Setting forth their great Losses thereby and praying His Majesty to Grant them Letters Patents for Collecting the Charity of Weldisposed persons throughout the Kingdom of England, Dominion of Wales and Town of Berwick upon Tweed, His Majty in Council taking the same into Consideration is pleased to Order and it is hereby Ordered

That the Rt. Honble the Lord High Chancellr of Great Brittain do cause Letters Patents to be prepared and passed under the Great Seal for the Collection of the Charity of all Weldisposed Persons throughout that part of Great Brittain called England the Dominion of Wales and Town of Berwick upon Tweed in the usual manner according to the prayer of the said Petitions.

(*To be continued.*)

CATTLE MURRAIN IN INDIA.

We have received the following letter from Mr. James Thacker relative to his report on the cattle disease in India, published in our last number.

Ootacamund, Neilgherry Hills;
22nd November, 1865.

My dear Sirs,—On the 7th November I sent you a copy of a report, with an appendix, on Cattle Murrain.

Since then I have been ordered here for the investigation of a similar outbreak, and, as far as my examination has now gone, I may report to you its results.

My cases number already 41, of which 20 have been fatal, 13 cured, 8 remaining under treatment up to this day. This contrasts painfully with the cases reported last year in Kurmool, where I had 44 cases, of which 33 recovered; I have felt consequently that I should write and explain how the type of the disease varies at different seasons and in different places.

On these hills the losses have been enormous. The collector says—"I have never heard of a disease which has proved more fatal to cattle than that which is now raging on these hills, and the chances are that, if measures are not at once adopted to separate the first infected animal from the herd, the whole of them will be lost within five days."

When I add that the herds spoken of are not housed day or night, you will perceive how virulent and powerful must be the poison if conveyed from one animal to another through atmospherical agency; as, with the natural circulation going on in the atmosphere, and which is greatly accelerated by wind, a hope might have been entertained of some few of a herd escaping. I perceive some opine that the disease is communicated only by contagion or absolute contact, and assert that it is not infectious. I confess if such be true I am at a loss for simultaneous outbreaks in localities miles apart, and where, as far as I know, there has been no communication of any kind, for the people neither buy nor sell stock, using their cows only for milk, which they consume themselves, so I cannot trace the possibility of disease having reached them by contact with sick cattle.

I may mention a modification of this type from that I investigated last year in Kurmool; there the cases lasted longer, especially for some period after the first outbreak; whereas here some animals have not lived more than six or seven hours from the time the natives observed the symptoms.

I have written this not with a view to its publication (unless, on the other hand, you wish it), but to guard against your forming the very natural opinion from my report sent you that the type of the Murrain in India is only an exceedingly mild one. When I have concluded my investigation here I hope to write you again more fully.

I hope my troubling you thus with matters professional will not be distasteful to your readers, for in this sad visitation in my dear old country I have felt impelled to send

you my jottings, to make such use of as you may consider them worth.

With kindest regards,
Believe me,
Yours, very sincerely,
J. THACKER.

The Editors of the 'Veterinarian.'

The subjoined report on the Indian Murrain has also been forwarded to us.

From R. RUTHERFORD, V.S., and Veterinary Assistant, Calcutta.

(From Dr. C. PALMER, Presidency Surgeon, to S. C. BAYLEY, Esq., Junior Secretary to the Government of Bengal.—Dated the 7th October, 1865.)

SIR,—I have the honour to forward my Report on the Cattle Disease which appeared in this neighbourhood in 1864.

I regret very much the great delay in submitting this; practically, however, this delay has been of advantage, and has added much to the interest of the subject. I am convinced that the disease now raging in England is the same we had here in 1864. I am persuaded it is a disease which for years has existed extensively in India, but which has up to this time not been recognised, and I am hopeful that it is amenable to treatment. Occasional or sporadic cases of a mild character are frequently met with and are successfully treated.

Should His Honour consider this Report of sufficient worth to be printed, I shall be glad to lend you any assistance in correcting the proofs.

Report on the Calcutta Epizootic or Cattle Disease of 1864.

The year 1864 will be memorable in the annals of Bengal as that in which the first Agricultural Exhibition was held in India. The collection of animals of various kinds was such as the most sanguine promoters of this great and successful undertaking scarcely ventured to anticipate. The accommodation laid out in the spacious grounds of Belvidere was, however, ample. There was no crowding of the varied, numerous, and interesting gathering of cattle, horses, goats, &c.; all of which were kept distinct and separate, were well housed and cared for, and the space allotted was all that was required, either individually or collectively. It was not long, however, after the opening of the Exhibition on the 24th January, that one of the cows exhibited, was taken ill and died. Several exhibitors took alarm and early removed their cattle; a rumour fast gained ground that a "Murrain" had broken out. This fear was soon confirmed by the fact

that other cattle became ill and died; and it was considered so serious that the subject was brought officially to the notice of Government, and the Government was requested to take the matter into consideration and cause an investigation to be instituted and reported upon. The Agricultural and Horticultural Society of Bengal, through the representations of Mr. John Stalkartt, took an active part in the inquiry, and suggested to His Honour the Lieutenant-Governor the appointment of a medical officer to assist, or rather to conduct, the wished-for inquiry. In compliance with that request, the writer of this paper was directed to carry out the views of the society and furnish a report on the nature and history of this "Murrain," and, if possible, to suggest a probable method of successful treatment of cattle attacked by it, and the means to be adopted to check its progress.

When, however, the orders of Government to this effect were received (and there was no delay whatever in issuing this order) the disease was on the decline not, however, before it had committed extensive ravages in the dairies and farm-yards in the suburbs of Calcutta.

We purpose, for the sake of clearness, to speak of this disease as the "Calcutta Epizootic of 1864," believing this term Epizootic to be more correct, and to convey a more definite meaning than the term "Murrain" or Cattle Plague. The word "Epizootic" having precisely the same technical signification in veterinary medicine and pathology that "Epidemic" has in human.

The earliest cases of the "Calcutta Epizootic" that appeared in the neighbourhood, and were brought under treatment, occurred on the 2nd January, or prior to the opening of the Exhibition. There is little doubt but that the disease existed to a considerable extent for some time even antecedent to this; indeed, it is difficult to define a period for its first appearance in Calcutta. It will be shown presently that a disease very similar, if not identical, broke out in Entally, in the suburbs of Calcutta, in 1862, and since then occasional or sporadic case have been observed. The opinion has been entertained by many that the disease originated amongst the cattle exhibited at Belvidere; but such was, as we have just shown, not the case. It existed for some time previous to the holding of the Exhibition. There is ample proof, however, that many healthy cattle contracted the disease there, and carrying it to their homesteads infected others. Mr. Rutherford, who was the first to recognise the existence of the epizootic, was early impressed with the idea that he was dealing with a disease hitherto unrecognised in this neighbourhood, by either cattle proprietors or by his profession, and it was not long before he was made fully aware of its intractable, almost incurable, nature, and of its infectious character. As has been observed, it first attacked one, and then many of the cattle exhibited, and towards the close of the Exhibition the epizootic appears to have reached its height. From this time it gradually died out, and when the subject was made one of special investigation the disease had not only materially lessened, but the cases that were brought in were found to be less severe and more amenable to treatment. By the end of April the epizootic had disappeared as such altogether, although sporadic cases have since been brought under notice and treatment, as we are informed by Mr. Greenhill; but as an epizootic from this time, the end of April the disease had died out. We may, therefore, define the time during which the disease existed, as an epizootic, from January to April inclusive. The havoc this epizootic committed during the period under review was great and serious; it spared but few; condition, nor age, nor sex, was a protection; indeed, the best fed and cared for, and in the highest condition, were at least as liable to be attacked, as cattle in poorer condition and indifferently housed and fed; and all equally succumbed. The disease, as a

rule, made a clean sweep of all the cattle in a yard where it had found ingress. We may in elucidation mention the fatal result to the large and valuable herd of cattle belonging to Mr. Floyd, of Alipore—he lost all. Mr. Stalkartt, of Howrah, lost all his, and many others who had for years given the subject of the improvement of the breed of cattle in Bengal much consideration, and had expended much time and money on this object, saw their work of years demolished in a few weeks. It is not, we regret, in our power to give any correct or reliable statistics showing the number of cattle attacked by this epizootic, but the result of treatment of those which were brought in was most alarming and discouraging, probably not less than a 90 per cent. died! (Rutherford.)

We now proceed to give the symptoms of this epizootic, for which we are indebted to Mr. R. Rutherford, who made careful notes of the cases that were brought under his observation and treatment, and who has most liberally placed his notes at our disposal. Mr. Greenhill also lent us valuable assistance whilst conducting our inquiries, and his observations corroborate those made by Mr. Rutherford. It is to be remembered that these notes were written some fifteen months since, and when we compare them with the symptoms given of the epizootic now raging in England their closeness and similarity to these is remarkable. Mr. Rutherford describes the symptoms thus:—"The disease is ushered in, in all cases, with fever of a remittent character, but it is only in a few cases that the shivering and swelling are observed; the skin is hot and dry, or otherwise of a clammy feel; ears hot, and pulsation of their arteries very distinct; extremities hot and cold alternately; breathing accelerated and oppressed; catching of the flanks and frequent twitchings of the muscles of the flank. Dulness and loss of spirits is an early symptom, and a strong disinclination to move or be moved about; the horns are hotter than usual, more so near their base; eye dull and expression of pain of a dull character; conjunctival lining red, and towards the inner canthus the membrane shows several ecchymosed spots; gradually the eyes become duller and more dusky in hue, a discharge of tears is constant, and the animal experiences great annoyance from the flies buzzing about the eyes; the muzzle is usually dry, hot and glazed, or otherwise a few drops of water are exuded, which, however, do not run into each other and make the muzzle moist, but remain isolated. There is early a watery discharge from both nostrils, which gradually assumes a mucopurulent character. From the mouth you early observe a dribbling of saliva of a sticky nature and mixed with air, and of a disagreeable fetor; the mouth is very hot and breath early of a most disagreeable fetor; this is a most important symptom and will almost distinguish the disease from any other. The tongue towards its base is slightly swollen and coated with mucus and saliva. I have observed no soreness of the mouth except in one case, and that was confined to the gum of the incisor teeth. At times, however, slight ulcerated spots are easily observed on the Schneiderian membrane; they are small and superficial, irregular edged and of a yellow tinge, owing apparently to a covering of lymph on their surfaces. The colour of the Schneiderian membrane is early of a deep red hue, gradually becoming more so, and in many cases evidently embarrasses the breathing. The air expired through the nostrils is also of a fetid odour, as also is the discharge; cough, although present, is not, in my opinion, pathognomonic of the disease, as I have only noticed it two or three times; this, I think is owing to the intense inflammation of the fauces and larynx; the pain of coughing would be fearful, and the animal avoids it. Amongst the earliest symptoms is the animal's total refusal of food and drink; water even cannot be swallowed, and these forced upon the brute are swallowed with great pain and difficulty; this is a distinguishing symptom and one of great value

taken in conjunction with the dribbling of fetid saliva from the mouth. At first the urine is only slightly changed in colour, in some instances not at all, but in all cases it latterly becomes very much diminished in quantity, of a high colour and strong smell. The action of the bowels, at first natural, rapidly becomes deranged; the discharges are of a darker colour, inclined to a blackish-green hue, rank and very offensive odour; but as yet there is no positive diarrhœa. At any time, however, from this, diarrhœa may supervene; the fæces become much thinner, are discharged frequently and with violence, mixed with mucus and air, and in most cases shortly afterwards with blood. By this time, however, the fever has generally altered in character; it has assumed a low typhoid form; the animal is thoroughly prostrate, capable of no exertion or exercise of nervous energy; the former symptoms are aggravated, the skin becomes cooler and more clammy, and the ears of irregular heat; remission of the fever takes place, sometimes once a day, in other cases in two days. This also is observable of the purging in a few cases; the breathing becomes short and quick, and pulse quick and tremulous; expression of face is that of dull pain and congestion about the head; the flies swarm about the eyes, mouth, and nostrils, and, as appeared in my *post-mortem* examinations, readily deposit their ova on the inner edge of eyelid and nostril. In milk cows the secretion is early diminished, gradually becoming less, but rarely entirely suspended; it is, however, of inferior quality and slightly altered in colour, as if mixed with the serum of the blood. In some cases symptoms of abdominal pain occur, getting up and lying down at times, boring the head into flanks and cold sweats; in others there is strong evidence of the lungs being involved; the breathing is catching and abdominal, and auscultation gives an increased harsh sound over the region of the larger bronchiæ. Towards the lower part of the trachea and bifurcation of the tube the mucous râle is very distinct. Tympanitis of the first stomach is a common symptom, but never to a great extent, and is owing to the suspension of rumination, which latter took place at the commencement of the disease; the food in the stomach ferments and decomposes, giving off gas in the process. If tapped, the gas still continues to form, unless some strong stimulant is passed in through the canula. Tenesmus is now present, and the motions are frequently mixed with blood; in other cases the discharges are like dirty water, and come away with sudden violence, discharged almost involuntarily. By this time the animal has become extremely offensive, its motions and breath taint the surrounding atmosphere to a nauseating degree, and in the majority of cases death now rapidly ensues from exhaustion and depraved blood."

Such are the symptoms noticed and detailed by Mr. Rutherford; he has condensed them into the following as "diagnostic symptoms:"

1*st.*—Total refusal of drinks, also of food, and this from the earliest stage of the complaint,

2*nd.*—Disagreeable fetid breath.

3*rd.*—The finger placed backwards on the tongue can detect the slightest fetor; generally this is unnecessary, as the saliva which dribbles from the mouth affords ample evidence of the fact.

4*th.*—No eruption on teats or soreness of feet.

5*th.*—Diarrhœa of a fetid character early setting in.

6*th.*—Scanty high-coloured urine.

7*th.*—Fever of a remittent form.

8*th.*—Disease averaging from two to eleven days, four days averaged in fatal cases; convalescence protracted to many weeks.

9*th.*—Inflammation of pharynx and base of tongue.

10*th.*—Tenesmus and dysentery, at times choleraic evacuations. These

symptoms, thus carefully noted by Mr. Rutherford, tally with the observations made by Mr. Greenhill, V.S., and by many non-professional observers who watched the progress and symptoms of the disease with minute attention. Amongst these Mr. Floyd has written a most clear and able description of the epizootic, as it first attacked and made its way through his farm-yard. This account is so full of interest that we venture to give it *in extenso*. Mr. Floyd writes:—"I sent several cows to the late exhibition at Aliporc, and they were all in good health when they left my farm-yard. A day or two before the prizes were awarded I observed that my best cow was failing in milk and would not eat (all) the food that was given to her. I attributed it to her being in a strange place. The following day she appeared afraid and anxious to leave the stall, quite regardless of her calf. In the afternoon an up-country cow died in an adjoining stall, and in the neighbouring stalls several belonging to Mr. Apcar and others were reported to have refused their food. A few days prior to this, one of two cows that had come from Chowringhee sickened and died. The death of the up-country cow above alluded to induced me to suppose that something serious was about to happen, and I obtained permission to remove my cows. The change, however, did my cow no good, she was still fretful, and in about a couple of days became very dull; the ears drooped, saliva ran from the mouth, and the eyes became inflamed. I then sent her away from the farm and had her treated by natives; they said she had the "Matha;" whatever it was, her calf took the disease and died first. The cow, being a strong animal, lingered for about eight days, diarrhœa came on; and she died. For a week or longer everything went on well, and I fancied that I had acted wisely in having sent the diseased cow out of the farm. Another valuable cow, however, fell sick, and in a few weeks every cow and calf belonging to me fell a victim to the disease.

I tried everything that man could devise—separating the healthy from the sick, keeping them perfectly clean, fumigating their houses, not sparing lime; giving those too ill to eat gram, &c., arrowroot, suttoo, and boiled rice, recommended by natives. During the first stage I tried purgatives with some, but in none could I perceive the slightest improvement for a single day; the symptoms were the same in every case, only some cows died in five days, others in eight or ten. The coat of my cows became rough, but there were no pustules visible, the mouth and throat appeared inflamed, and the eyes became mattery after the redness subsided, which was generally in about three days.

I would here remark that I placed three healthy cows in my stable in the hope of saving them; they did very well for some time, but even there the disease attacked them; they were removed without loss of time. A fortnight after, however, my horse got sick, suffered with the same symptoms and died in less than eight days. I got the stall thoroughly repaired, the floor renewed, and all the wood-work painted, and all the time it remained unoccupied (nearly two months). I kept it well aired and smoked; not apprehending infection, I brought a healthy young mare and kept her in the stall for about twenty days, when she too sickened in the same way and died. The sufferings of the horses were greater than those of the cows; the throat became affected much sooner.

In one thatched shed, with a kutcha (mud) floor, four calves became diseased and died. I then placed an old sow in it, and kept her there for about three months; she never got ill, and when I removed her I had the shed well cleaned and covered with clay and cow dung, and kept two horses in it up to the day of the late cyclone (October 5, 1864), when the shed was blown down; the horses were not sick nor sorry for a single day." Mr. Floyd proceeds to recommend, on the authority of a letter to the *Illus-*

trated London News of some time since, turpentine, and states that the remedy was successfully tried by his neighbour, Mr. Pritchard; to this we shall resort when we notice the mode of treatment of the disease. He then observes—"The disease from its first stage attracts myriads of flies, which prove very distressing to cows. When Mr. Pritchard's cow got the turpentine and linseed oil, the total absence of flies was remarkable." Some years ago the disease prevailed in Russia, and lasted for five years. Some parts of Australia has been known to suffer from it. Natives of the north-west provinces say that, whenever it has appeared, it has remained for four or five years, breaking out between November and January, and carrying off horses and other animals, as well as cows. This highly interesting account tallies very closely with the symptoms given by Mr. Rutherford, and it is of importance to note that Mr. Floyd's description is that of a non-professional person, who described exactly what he saw without consulting a veterinary surgeon. Further, both these reports were made during last year and long before the English "Cattle Plague" had made its appearance.

It is worthy of remark here that the cattle treated by Messrs. Greenhill and Rutherford were invariably brought to the extensive stables over which they preside, were kept in stalls and boxes adjoining horses, yet the disease was in no instance communicated to horses, and even with Mr. Floyd's cases before us we cannot but record our opinion that the disease is not communicable to horses.

Our own observations, and those made by others, who watched the progress of the epizootic, are completely confirmatory of the foregoing.

In 1862 Mr. Ladd, who has long been an enthusiast in cattle breeding, had a fine young cow attacked at his farm at Entally, in the suburbs; his description of the disease his cow suffered from corresponds closely with the above specified symptoms. She was treated by a highly intelligent veterinary surgeon, Mr. Bretherton who pronounced the disease to be an uncommon one, and to be essentially a "blood disease." Out of a total of nine head of cattle seven were attacked and died; but it does not appear that the disease spread at this time. Mr. Rutherford, however, states that he believes he has met with cases occasionally both in Calcutta and on the other side of the river at Seebpore, but that these cases were of a sporadic character and did not spread. Mr. Ladd recognised the disease at the exhibition on its first appearance as the same his cattle had been affected with two years previously, and warned Mr. Floyd of its infectious nature, and advised him to remove his cattle at once; but the warning came too late; these circumstances are of practical importance, as they go far to prove that the Calcutta epizootic of 1864 was really not, as was generally believed, a new disease, although we are not in a position to assert that it had been previously known as an epizootic.

Having thus fully given the symptoms characterising the Calcutta epizootic of 1864, we proceed to remark upon other epizootics which have been rife of late years in different portions of this country; and we shall be led to the conclusion, from the information which has been submitted by the chief officers of extensive districts, that a disease similar to, probably identical to, that we have described, has been long known under other denominations in India, and we shall endeavour to show that at least two distinct epizootics are, and have been, of frequent occurrence. To quote extensively from the reports which have been submitted would be to lengthen this paper to an inconvenient and unnecessary extent. The correspondence has already been published in the supplement to the *Calcutta Gazette* of March 12th, 1864. We propose, therefore, to extract only briefly from these letters, premising that there is a remarkable resemblance

in all the descriptions given, so much so that we are compelled to believe that similar epizootics have been recognised in various districts and appear to be equally fatal in all. There are, doubtless, many other and different epizootics which may have been confounded with those described; but we have, we believe, ample evidence to lead to the conclusion that at least two distinct, highly fatal and infectious, epizootics have been described in these reports with considerable accuracy. One of these epizootics is the same as the Calcutta epizootic of 1864. The other is of a different character, but also well known in Calcutta. The districts from which reports have been submitted comprise a large portion of the Madras Presidency and nearly all of Bengal, viz., Burdwan, Nuddea, Rajshahye Patna, Chittagong, Bhaugulpore, Dacca, Cuttack, Assam, Chota Nagpore, Cachar, Darjeeling, and, were the inquiry extended to the north-west provinces and the Punjab, it is believed that reports similar to those submitted by the Bengal officers would be furnished, and Mr. Floyd's statement, founded upon information given him by natives belonging to the north-west, that a similar disease has been for years known there, would receive confirmation.

When it is borne in mind that the various reports above alluded to are each an analysis of many reports furnished by the magistrates attached to the several districts in the extensive divisions mentioned, we should *a priori* expect to find a great variety of description and not a little actual inaccuracy; such, however, is not the case, and we believe that the general similarity of these reports is owing to the fact that the natives, as a rule, describe all epizootics, or cattle plague, as smallpox—ghootee or bussunt; and this is particularly exemplified in Mr. Floyd's memorandum; he says, speaking of his cow that he had handed over to the natives for treatment, "they said she had the matha," smallpox; further, we have known a disease attacking numerous heads of cattle in Calcutta, and carrying off large numbers, described as bussunt or ghootee or smallpox. Under this name it was for years known as existing amongst the cattle belonging to the municipality of this city; and it was only in 1861, when a veterinary surgeon was, on our recommendation, appointed to the care of the municipal cattle, that the disease was accurately described and recognised, not as a variola or smallpox, but as a most alarming, fatal, and highly infectious epizootic, viz., the "eczema epizootica," or aphthous epizootic, or "foot and mouth disease" of veterinary pathologists. It is this epizootic which has been so universally described, and in terms of extraordinary similarity, as the disease which has reckoned its victims by tens of thousands throughout India, and with which the epizootic which appeared in Calcutta and elsewhere has been, we believe, not infrequently mixed up and confounded; the two diseases have many features in common, but they are entirely different in their nature. The "eczema epizootic," the animal is feverish frowish, listless, exhibit all the symptoms of fever, and is *lame;* the feet high up in the cleft of the hoof are early affected; vesicles are frequently observed on various parts of the body, especially between the thighs; the mouth becomes affected, dysentery supervenes, and if allowed to arrive at this advanced stage the majority die; but the disease, if early recognised, is very amenable to treatment. From our own experience we believe it selects the ill-fed, over-worked, and weakened constitution. Comparing these symptoms with those given of the Calcutta epizootic of 1864, it cannot be a matter of surprise that the two diseases have been confounded.

Captain Nelson describes the cattle disease in the Madras Presidency thus:—"The disease in question, which is now reducing the heads by half, shows itself first in a refusal of food; the ears droop; the eyes run water; purging commences, which in a few days becomes a bloody flux; and the

whole body is covered with pustules. The animal dies between the fifth and tenth days, when with a piece of cloth you may sweep the body completely free of hair and cuticle; it comes off as if it had been scalded." This description tallies completely in certain well-marked features with the symptoms given of the Calcutta epizootic; but it clearly and indisputably, we consider, establishes the difference, in that the animal is "covered with pustules," &c. Captain Nelson is describing the "epizootic eczema," or, as it is commonly called in England, the "foot and mouth disease," and we venture, without casting the least disparagement on Captain Nelson's observations, to hint that, had the epizootic he has so well described been watched by a veterinary surgeon, we should have learned, in addition, that the feet were early affected, even though actual lameness had not resulted.

Captain Campbell, Deputy Commissioner of Nowgong, describes an epizootic in his district thus:—"On referring to the records of this office I find that, in the year 1853, from January to June, no less than 21,625 head of cattle died. During the above period cholera was raging to a great extent, and carried off 9060 persons; consequently the natives I asked about it say it was the same disease that carried off the cattle. The symptoms appear to have been a *swelling of the tongue*, which protruded from the mouth, great purging, and the animal was generally dead in two days. I cannot discover that there was any resemblance to smallpox, as appears to be the case at Madras." Here we are evidently dealing with a disease distinct from that described by Captain Nelson; and we are of opinion that it was of the nature of the Calcutta epizootic.

From Jessore, a district which suffers much yearly from extensive mortality of cattle, we have Mr. Oliphant writing as follows:—"It (the cattle disease) is known by the name 'Mardrishtee,' which means the look of mother 'Shetala,' the goddess of smallpox; and the first symptoms which generally show themselves are a disinclination to eat food, a blood-colouring of the urine, and the breaking out of pustules on the body; and these are followed by others mentioned by Captain Nelson." Mr. Oliphant proceeds to say that the disease is considered fatal, and mentions the means used for effecting a cure or arresting its progress. This disease is, we feel persuaded, "the eczema epizootica." Mr. Oliphant, however, goes on with his investigation, and says:—"There is, however, another disease in this part of the country, very similar to the above, but much more common, called 'Puschima,' probably because it was supposed to have travelled from the west, and a large number of cattle have fallen victims to this disease within the last few years. The symptoms are, for the most part, the same as in the first-mentioned disease, with the exception *that no pustules are visible on the body. The natives, however, appear to think that the two diseases are distinct*, and that what cholera is to man puschima is to the cattle; they look upon it as fatal, and do not appear to try any remedy or cure." Mr. Oliphant states that owing, as he is informed, to the ravages of this latter epizootic chiefly the diminution of cattle in his district, Jessore, is such that the price has risen "ten times higher than it was formerly." In the district of Burdwan, again, two distinct diseases are described. The one as Ghotee or smallpox, the other is there also, called "puschima," which is more fatal than the former. The immediate symptoms are, loss of appetite, swelling of the glands of the throat, difficulty in breathing, enlargement of the head, and occasionally of the stomach also. It is scarcely possible to have a more independent convincing evidence than the above that the two distinct epizootic, we have named have been for years raging in one and the same district or locality, and it, we consider, establishes our view that the two epizootics, viz., the eczema and the Calcutta epizootic,

have extensively existed, and not improbably contemporaneously in the same localities, and that they have been in some instances confounded. The reports before us are replete with similar evidence; but we must be content with one further extract, to add still greater force to this opinion. Mr. Jervoise Grey, writing from Sarun, describes a disease which is there called "seetla," or "matha," or "chenchuck," and of which the symptoms are similar to those of the cattle murrain prevailing in the Madras Presidency, namely, refusal of food, running from the mouth, eyes, and nostrils, and purging, *but pustules are said to appear only slightly and occasionally.* This, we are of opinion, is the Calcutta disease, and not the "eczema epizootica." Mr. Holm, a gentleman of great experience in Rungpore, alludes to a disease amongst cattle known there as "gola-har," the chief symptom of which is "ulcerated sore throat," for which no successful treatment is known. He also describes the bussunt or smallpox and "cholera."

Sufficient has, we think, been advanced to prove the existence, very extensively throughout India, of two distinct and very fatal epizootics; the one we believe to be identical with the "eczema epizootica," or "aphthous epizootic," or "foot and mouth disease" of England. The other is identical with the Calcutta epizootic of 1864, and which we have advanced evidence to show was no new disease, but had hitherto been either confounded with other diseases or not taken any very special notice of. We have hitherto spoken of this epizootic as that of Calcutta of 1864, without attempting to classify it amongst recognised cattle diseases. We have little doubt, however, that this disease is the one known in Europe as the "rinderpest," the epizootic which for so many years past has devastated Central Europe, and from "its home," the steppes of Russia, has again forced a footing in England, and is at this moment working out its deadly course amongst the cattle of the metropolis, and by the last-received accounts is spreading through the counties of England; a disease which, in the opinion of those best qualified to judge, both in England and France, was restricted to a circle, large indeed, but still restricted, and could not possibly extend itself beyond those precincts. If our opinion be correct, it will be seen that this deadly cattle scourge has been making rapid strides in this an eastward direction, and that all the regulations which have been on the Continent of Europe so rigidly enforced, the military "cordons" which were to have prevented any diseased cattle from leaving a farm or a locality in which the disease had shown itself, and the strict supervision exercised at ports, both of export and import, have apparently proved futile in checking the spread of this fatal epizootic in a westwardly direction. Accepting the opinion expressed by Professor Simonds and other leading veterinary authorities, both in England and on the Continent, that the steppes of Russia is the home of this disease, and that it has spread from thence by infection, and that by severe sanitary prohibitions its progress might be limited—it is a highly interesting and important fact to advance that this same disease has travelled eastward, and, as it has been unchecked by any sanitary restrictions, its progress has been, perhaps, proportionally more rapid in an eastwardly and unguarded and unprotected direction than it has been westwardly, where science, backed by arbitrary and even despotic Government aid, has been called in to check its march, but with, as it now appears, only partial success; it was checked only, not turned back; it is raging in England with a violence equal to any it has exhibited in India or elsewhere, and threatens to bring distress and disease to thousands. It, however, must be borne in mind that, although a universally admitted contagious or infectious disease, it is not at present believed to owe its existence to infection alone; it is held to be a true epizootic engendered by some malarious or as yet unknown epizootic influence, and in all probability its cause will be found

to be similar to all other epizootics, and it will exhaust itself or die out. It would occupy too much space to transcribe the symptoms, &c., given by Professor Simonds and others of the epizootic of Central Europe and Russia, and which is known on the Continent as the rinderpest, which name Professor Simonds proposes to designate it by in England. We content ourselves by asserting that those symptoms so closely resemble the symptoms observed here of the disease in 1864, that little doubt can be entertained as to the identity of the two diseases; but should any person wish to pursue this subject more minutely we would refer him to Professor Simonds' evidence given before a Parliamentary "Committee on Contagious Diseases Bill," and his "Report on the Cattle Plague;" and a paper by M. Renault, Director of Alfort, read before the Central Society of Agriculture of France, all of which are contained in the *Veterinarian* for 1857-58 and 1859; and in an article headed "Cattle Plague" in the *Veterinarian*, July 1st, 1857, will be found a very full description of the rinderpest, which we had transcribed, but now exclude from this paper, as we fear extending it to too great length. These articles are well worthy the perusal of those interested in this inquiry, and we believe that the symptoms described in the *Veterinarian* prove the identity of the two diseases—the "rinderpest" and the Calcutta epizootic of 1864.

It has been remarked in England by Professors Simonds, Gamgee, and others, that the present English epizootic is not only the "rinderpest," but that it was known in England in 1745, and was ruinously destructive throughout the country. Existing for several years (twelve), in spite of the most stringent sanitary laws enacted and rigidly enforced with the view of checking its spread, it was stated to have been then imported from Holland by two diseased calves; it is now reported to have been brought by foreign cattle into Islington market. The general opinion is, that it is an imported and infectious disease but, on the other hand, there are many who insist upon its originating within the country, and is not an imported disease, and this question is now being very warmly discussed. The descriptions given of the symptoms are, however, very similar, and admit of little or no misunderstanding or doubt as to the nature of the disease when it shows itself. We select amongst numerous reported symptoms, furnished by men of evidence, the following, which are published by order of the Privy Council. The identity of the symptoms with those recorded by Mr. Rutherford in this paper are remarkable, and again confirm our opinion of the nature of the disease which we observed here in 1864.

The following is copied from the *Evening Mail* of August 7th, 1865:

"Description of the symptoms of the disease before referred to:—"

"Variations in the earliest indications of the disease will be manifested; these depending somewhat on the severity of the attack, but more especially on the circumstance as to whether the digestive or respiratory system is the chief focus of the malady.

"As soon as the affection declares itself the animal ceases to take any kind of food, and in most cases even refuses water; rumination is suspended, and the animal stands with its head drooping and its ears drawn back. If made to move it shows great prostration of strength, and frequently staggers as if about to fall. The skin is hot in places, and often remarkably so between the limbs, the hind ones in particular.

"An exudation early takes place from these parts, and is succeeded by cracks and sores. The hair is staring, especially along the upper part of the neck, shoulders, and back. The extremities are cold, even at the commencement of the disease, and in a later stage the increased heat of the surface of the body gives place to a remarkable coldness, especially along the course of the spine.

"Tears trickle from the eyes, which are red and expressive of suffering, and a watery discharge flows early from the nostrils. There is a continuous increase of these secretions, which become more or less purulent in the advanced state of the malady. The mouth is hot, red, and 'inflamed,' often presenting here and there raw-looking spots, especially on the inner side of the lips and along the roof. The breath is fetid. The respiration is increased, and generally accompanied with a moan in the advanced stages. A slight cough is also present in some instances. The pulse is quick and weak and scarcely to be felt, excepting at the heart, even at the commencement of the disease.

"The bowels are sometimes torpid at the outset, but diarrhœa leading to dysentery mostly follows; the evacuations being slimy, liquid, and of a dirty yellow colour, occasionally tinged with blood. Tenesmus is likewise present as a rule. Slight tremors of the muscles of the shoulders and thighs are to be observed in some cases, and so also is an emphysematous condition of the skin along the upper part of the back. In milch cows the secretion of milk is quickly arrested, a remarkable diminution in the quantity taking place as one of the early indications of the attack. As the disease advances towards a fatal termination the prostration of the vital powers becomes more marked; the breathing short, quick, and more painful, the alvine evacuations more fetid and more slimy, and the surface of the body deathly cold. The animal will sometimes sink as early as twelve hours from the commencement of the attack; but in many cases the disease will be protracted to the fifth or sixth, and occasionally to the eighth or ninth day.

"The period of incubation of the disease is found to vary, the majority of animals sickening on the tenth day after exposure to the infection, but some have been attacked on the seventh day."

Nothing can be more convincing than the above description, tallying almost verbatim with those we have given of the symptoms of the Calcutta epizootic. The diseases are, we consider, one and the same. Mr. Rutherford's memorandum was written fifteen months since, Mr. Floyd's ten months since, the symptoms just copied from the *Evening Mail* not two months ago, and Mr. Greenhill, who has paid much attention to the disease, and has treated a vast number of cases, gives a similar description.

It would be highly interesting to trace the roads by which this epizootic has spread itself over the whole world, and doubtless ere long we shall ransack its origin and spread with the same accuracy as the origin and spread of epidemic cholera has been investigated and made known. It is worthy of remark that the cattle disease which devasted Egypt broke out in that country a few weeks after its disappearance here, and we are informed by the *Times* that that epizootic carried off no less than 1,700,000 head of cattle.

Mr. Rutherford made *post-mortem* examinations of a great number—with one or two exceptions, all of his cases—and he has kindly placed his notes at our disposal; they will be read with interest by those who feel interested in this subject. He remarks—"The principal changes were confined to the mucous membrane of the alimentary tract. *The tongue* in all cases is swollen, particularly towards its base, and throughout its whole substance I observed effusion into and discoloration of the muscular substance. The superior investing membrane in all cases was separated from the substance of the tongue by effusion, was very much thickened, and was covered with a thick, viscid, fetid secretion, or products of inflammation, apparently *muco-purulent*. The mucous membrane of the *pharynx* was similarly inflamed, and presented the same characters, being thickened and covered with a grayish exudation. In all cases these appearances extended

into the nasal passages, producing throughout appearances somewhat modified towards the nostrils. In some cases small abrasions were observed on the Schneiderian membrane. I noted the fact of immense quantities of small bodies resembling the ova of flies covering the mucous membrane of the posterior nares and pharynx. In most cases the inflammatory signs were traceable into the larynx, and thence more or less modified into the *trachea*, seldom further. From the *pharynx* the appearances above noted were to be easily traced along the *œsophagus* into the first and second stomachs, and into the third stomach; here, in many cases, the food was found caked as hard as in the disease known at home as 'fardel bound.' This appearance is owing to the non-swallowing of fluids, the arrest of secretion and functions of the third stomach. In all cases the fourth or true stomach was very seriously affected; it was generally empty, with the exception of a little variously coloured liquid; the mucous coat red, in patches dark red, swollen and thickened, and very easily detached from the muscular coat. In many cases bile was plentiful in the stomach, as also in the *duodenum*, which intestine with the jejunum and ileum was affected similarly as, but more intensely than, the stomach; ulcerated patches were frequently met with, but never any deep ulcers, but rather rough, irregular-edged depressions on the mucous membrane, with dark red circumferences. The *large intestines* were generally empty and but slightly affected, with the exception of the *rectum*, which generally exhibited signs of great irritation. The *liver* was in all cases highly congested, and even enlarged. The kidneys and other viscera were in nowise affected. The blood was in a grumous state."

Mr. Greenhill also made *post-mortem* examinations of very numerous cases which came under his observation and treatment, and he gives the following as the chief and most important of the diseased appearances noted:—"The back part of the tongue and throat inflamed; mucous membrane of the larynx and air-passages inflamed; heart soft in texture; liver congested, and the whole of the fourth stomach greatly inflamed with patches of a dark purple hue, and abrasions of the mucous membrane all along the alimentary canal. The rectum for about three feet from the anus inflamed and studded with black patches. The large intestines healthy; kidneys healthy."

These *post-mortem* appearances correspond in many respects, and, indeed, generally, with those met with by Professor Simonds, and described in his evidence before the Parliamentary Committee before alluded to. They indicate a typhoid or "enteric" condition, and bear out to a very considerable extent the idea that has been advanced that this disease is a "typhoid fever."

To those who have read the reports and evidence of Professor Simonds published in the *Veterinarian* "On the Rinderpest," also the reports furnished by the commissioners and magistrates throughout Bengal of the cattle diseases observed in their several districts especially noticed in this paper, our own remarks regarding the Calcutta epizootic of 1864, and the recent accounts of the disease now raging in England, it will not be a matter of surprise to learn our complete inability to recommend with confidence any one particular treatment as likely to be generally attended with successful results. We have already recorded the almost universal fatality amongst all the cattle submitted to treatment. At one period every case died, but towards the decline of the epizootic many cases did well. Some of these exhibited the disease in a marked form, but by great care and attention made a slow, tedious, but at length complete recovery; and from these we may be permitted to recommend a course of treatment which in mild cases will be found to be generally successful, and certainly worthy of trial in even the most hopeless. We would venture to hope also that, as

the nature of the disease is more minutely investigated, and its pathology understood, a corresponding advance will be made in its treatment, and this, we feel persuaded, will ere long be the result of the general discussion and deep interest the disease is at present commanding in England.

It would be of no practical utility our relating the modes of treatment which have from time to time and in different places been adopted by the natives of this country. The result of such treatments has been generally utterly inefficacious, based, as they frequently are, upon superstition. "Poojahs," with some rice grown at Juggernauth, raw fish, and the dried tongues of tigers and leopards, with others, have had, and continue to remain, on trial. More rational and consistent measures have, however, been in many instances adopted, such as the removal of infected cattle, cleanliness, fumigating infected cow-sheds, and the giving of nutritious non-stimulating food and fresh wholesome grass, also stimulating drugs; but the same story is told by all—treatment is inefficacious, and to quote any mode of treatment, and which is allowed to be of little value, would be simply filling this paper with certainly many curiosities in the native and even European treatment of diseased cattle, but can be of no practical utility.

To give, however, the treatment adopted, in some cases with success, will, we consider, be of much practical assistance, not to that portion of the public only who are deeply interested in this important subject, but also to members of the veterinary profession, both in India and in England, who have hitherto considered the disease almost, if not wholly, incurable. We might quote many cases of successful treatment, but the following will exemplify sufficiently the treatment which we would advocate. The two cases subjoined were treated by Mr. Greenhill. We watched these, and we can safely affirm that they were well-marked and almost hopeless cases of the disease.

Case 1, *by Mr. Greenhill.*—"April 10th, 1864, called to see a cow of Mr. J. Stalkartt, of Howrah. The cow was in an off place, having been separated from the others by the owner. I found the cow with a young calf by her side about six weeks old; the cow's skin was hot and dry, coat staring, breathing increased, mouth and breath fetid; a quantity of saliva dropping from the mouth; the saliva was of a thick sticky character; eyes rather dull. Ordered the cow and calf to the hospital. Purging had not commenced when I first saw the cow. Gave spirit of nitre ether six ounces, aromatic spirit of ammonia two drachms.

"On the 11th cow worse; eyes sunk in her head, breathing increased, purging greatly, black in colour and fetid, with slime coming after the fœcal matter had passed, lying down a good deal, the head protruded straight; gave opium one drachm, camphor one drachm, with gruel; towards night the cow seemed a little better, but took not the slightest notice of her calf; repeated the medicine.

"On 12th purging less, cow easier, breath fetid; gave spirit nitric ether six ounces, gentian four drachms, aromatic spirit of ammonia two drachms, in gruel. Calf taken the same as the mother; with great trouble we gave it food. Night, cow better; gave gentian and ginger half ounce each, with one drachm camphor in gruel; gave calf gruel; calf unless roused, would lie in one place.

"On the 13th cow this morning passing large quantities of blood, but the fœcal matter better in colour, and the fetid smell not so great; calf worse; gave cow two bottles of beer with two drachms of gentian and two drachms of ginger. At 2 p. m. cow for first time notices calf and inclines to pick green grass; calf worse. Night, cow easier; dung of better colour, and less purging; gave gruel with beer.

"On the 14th cow better; calf dead; dung brighter in colour; purging stopped, no more blood passed; dull about the eyes; gave beer with gruel: 1 p. m., gave beer gruel: 6 p. m., cow breathing hard, lung affected, cough dry; blistered sides with croton oil and turpentine; gave opii one drachm, tartar emetic two drachms.

"On the 15th dressed blisters, gave gruel; breathing easier, and brighter about the eyes, purging setting in again; gave camphor and gentian each two drachms, and opium one drachm in gruel: 1 p. m., gave gruel again; cow appeared easier: 6 p. m., purging less; gave gruel.

"On 16th cow better and brighter, purging stopped, breathing less; dressed sides, gave gruel; cow picks a little Australian hay for the first time.

"On 17th cow better; dung bright in colour, but still fetid; gave gruel; eats a little dry hay and green grass. The cow from this time had no bad symptoms, and was discharged cured.

"*Case* 2.—A white bullock entered in April 11th. Coat staring, large discharge from mouth and nose, breathing quick and fetid, dung of a blackish colour; gave Epsom salts one lb., powder of capsicum one ounce, turpentine four ounces, and gruel.

"On 12th bullock purged, smell fetid; dull in coat; breathing slightly decreased; flow of saliva from mouth, and discharge from nose less; gave camphor one drachm, spirit nitric ether six ounces, aromatic spirit of ammonia two drachms: 1 p. m., gave gruel; bullock dull, purging lots of mucus and small qnantities of blood, and very fetid: 6 p. m., purging less; bullock dull; gave ginger and gentia of each two drachms, with beer in gruel.

"On 13th bowels more healthy, less fetid; eyes brighter, less fever; gave camphor one drachm, nitrate of potass two ounces in beer gruel; 1 p. m., gave gruel; looking better, but not feeding: 6 p. m., purging stopped; dung healthy in colour; eats nothing.

"On 14th bullock better; eyes brighter, breathing little harder; breath less fetid, dung rather hard but healthy, refuses all food; gave beer gruel; lies down with head straight out and groans a little: 1 p. m., gave tartar emetic two drachms, nitre two ounces, ginger one ounce: 6 p. m., dung healthy in colour but hard; eats nothing; gave Epsom salts two ounces, camphor two drachms, powder capsicum two drachms.

"On 15th bullock not so well, breathing greatly increased; blistered both sides with croton oil and turpentine; gave tartar emetic one drachm, nitre two ounces, turpentine two ounces in gruel: 1 p. m., no better, blister upsetting the animal: 6 p. m., the same; gave gruel.

"On 16th blisters taken, dressed; breathing easier, but grunting; bowels well opened but not much purged; a quantity of gas passing off from intestine; gave assafœtida two drachms, powder capsicum one drachm, camphor one drachm: 1 p. m., easier; gave gruel; looking about; left off grunting: 6 p. m., gave beer gruel.

"On 17th dressed blisters; bullock looking better; coat smoothed, eyes brighter and fuller, breathing easier, beginning for first time to pick Australian hay. This bullock had no relapse from this time, and with nursing and good feeding completely recovered."

These two cases exemplify the mode of treatment which in Mr. Greenhill's hands has been most successful, and under which he has saved about 50 per cent. Mr. Rutherford has kindly furnished the following summary of his treatment:—"Many of the cases, in fact all that I admitted into hospital, were put into cool, airy, and thoroughly healthy boxes. My earliest cases were treated, if purging was present, with brandy and tincture opii (laudanum), and on relief being given this was followed by frequent doses

of quinine, brandy, and ammonia, in different forms; invariably the purging returned, and as invariably sinking and death. At one gentleman's request, and on consideration of his theory of the disease, I opened the skin, made wounds and injected and inserted on sponge infusion of quassia; the result was death in the two or three cases experimented on. Different mixtures were applied to the head to keep the flies off, such as those of camphor, turpentine, creasote, and tar water. One case, that of a very fine young Devon bull, recently imported, and in which the symptoms were peculiarly violent, I had removed to a large airy box, and at once gave a mixture containing the liquor ammonia acetatis, and sulphate of magnesia (Epsom salts), inserted a seton on each side of the throat and blistered his spine, and twice a day applied a strong solution of the nitrate of silver to the base of the tongue and pharynx; he had large quantities of gruel poured down his throat, and stimulants of every description; and also Donovan's solution of arsenic was administered; this medicine was also given in several other cases, and with no satisfactory results. This animal, like all treated at this period, died. In March the disease became more amenable to treatment, as it was also becoming lessened in intensity and in numbers of animals attacked, and from this period cases did recover. One case especially is deserving of notice. A cow, the property of Mr. Cockerell, of Allipore, which had the disease in a well-marked form, and from the precautions I adopted for the protection of the other cattle in his homestead, the disease did not extend. The treatment adopted in this case, stimulating the throat both internally and externally daily; administration of large and repeated doses of camphor, sweet spirit of nitre, nitrate of potass or nitre and bhang, and a sufficient quantity of whey to form a drench, and the diet such as she would herself select. I experienced great difficulty in many cases from the total suspension of rumination; and from the affected condition of the third stomach, preventing the free and absolute passage of medicines administered into the system, I had to puncture the rumen in many instances to allow of the escape of gas generated in the decomposition of undigested food; in some cases I passed a tube into the stomach, which allowed the escape of gas as fast as it formed, and by means of which I could pour in stimulants with the view of rousing the rumen into action. I am satisfied, from the results of my latter cases, that the most effectual treatment consists in mild laxatives, combined with powerful diffusible stimulants, and particulaly counter-irritation by setoning and blistering over the right side, especially towards the false ribs. Setons to the region of the throat I also recommend, and supporting the strength with the best and most nutritious diet in a liquid form. There are many things which will suggest themselves in special cases to the observer."

"In many cases I noticed great relief obtained from sponging the body frequently with vinegar and water. I think there is great difficulty in pointing out a remedy within the means of the poor class of native cattle owners, unless they confine themselves to preventive measures and to the use of native purging medicines, combined aromatics and stimulants."

Mr. Floyd has advocated the employment of turpentine and linseed, and towards the end of the Calcutta epizootic this treatment was most efficacious where it was tried. It is one that we believe might be more extensively and with much confidence again carried out; it is certainly well worthy of trial, being within the reach of all.

We may give the following as the general indications of treatment to be followed.

I.—Placing the patient in a well ventilated open place, with plenty of clean straw, a dry flooring, and scrupulous cleanliness.

II.—Aperients and diffusible stimulants, such as ammonia, ether,

camphor, the nitrate of potass, and sedatives, of which the *Cannabis Indica*, Indian hemp, or bhang, is, perhaps, the most valuable, and in this country the most readily commanded.

III.—Counter-irritants, such as turpentine and croton-oil embrocations, setons smeared with some stimulants, especially croton oil, as being quick in its action, and these may be applied to the throat and sides of the chest, and especially over the right side and region of the liver.

IV. Nutritious and even stimulating drenches; gruel made with beer, arrowroot, linseed, and even alcohol or ether, may be mixed occasionally with these drenches, and fresh green fodder or any fresh wholesome food, whenever the animal shows a disposition to pick any.

V.—Sponging the body, especially the head, nares, and around the eyes, with cooling washes, such as vinegar and water, which will give a feeling of relief and coolness, and tar-water or kerosine may be employed with the view of keeping off the flies which swarm about the diseased animal.

VI.—Supporting the strength in every possible way during convalescence.

To those conversant with the treatment of cattle the above record of cases and indications for treatment of the disease are ample; but to many who have no opportunity of consulting a professional man, or even of obtaining the remedies we have mentioned at once, a few plain directions may be of value, and the ingredients we select are to be procured in almost every bazaar in the country.

In the first stage the following may be given as an aperient drench.

Epsom salts eight ounces, common salt eight ounces, powdered ginger or pepper, or any aromatic stimulant, one to three ounces, mixed up in conjee water, or plain water, and given as a drench. At the same time employ hot-water fomentations to the throat, or stronger counter-irritants. If the premonitory symptoms are severe, turpentine six ounces, croton oil one ounce, is a sharp and effectual counter-irritant, and, if procurable, ammonia; the strong liquid may be added, and this rubbed in over the fauces, the chest, the right side over the liver, and along the spine.

The bowels having been acted upon, the next object is to sustain the vital powers and stamina, and sedatives, combined with direct stimulants, should be given with an unsparing hand. The following will be found useful:—Camphor one ounce, bhang four ounces (any preparation of *Cannabis indica*, but that met with and sold in the bazaar answers very well), carbonate of ammonia four drachms, brandy one pint, given in a quart of water or, when procurable, whey.

When the dysenteric symptoms supervene we can only recommend a steady exhibition of gruel and mucilaginous drinks and stimulants; the so-called astringents, kino, chalk, &c., have not been found sufficiently successful in their action to warrant our recommending them for trial.

A strong solution of nitrate of silver, a scruple to the ounce, should be applied to the swollen tongue, and as far down the fauces as practicable; if this is not obtainable, sponging the tongue and fauces with a solution of common salt will be of service.

Where expense is not an object, we would suggest a trial of large doses of quinine and ipecacuanha. The treatment has not been, so far as we are aware, tried; but the wonderful influence the latter drug exercises in the human subject in cases of dysentery with hepatic complication, and having here before us a disease which rapidly runs into a deadly dysentery, induces us to suggest a trial of this remedy; it should be resorted to on the first appearance of dysenteric purging, at the same time we would perseveringly administer stimulants, nutritious drenches, and counter-irritants.

The above comprises all we have to suggest as regards the therapeutic or

remedial measures which are likely to be of service; and admitting a loss of even 90 per cent. of cattle treated, and which is certainly taking the highest possible ratio, and bearing in mind that towards the decline of the epizootic the cases which came under review were milder and more amenable to treatment, until we find Mr. Greenhill returning a ratio of at least 50 cures per 100 treated, we are justified, we consider, in urging a full trial of the remedial measures we have above given, and encouraging all who may unfortunately be visited by this disease to patiently and perseveringly carry out the measures we have recommended, and not to be disheartened at even repeated failures. We cannot hold out prospects of great success; but we believe that many valuable cattle will be saved by attention to the rules we have laid down. We would most certainly not recommend the wholesale slaughtering of cattle which our countrymen in England appear to have so universally, and, as we think, unadvisedly, recommended on the first outbreak of the disease, but which we are glad to find has received a check. We cannot refrain from quoting an extract from one of the many able and practical articles which have appeared in the London *Times*. It gives encouragement, and is replete with some practical common-sense:—"What strikes us most is the facility with which farmers and veterinary surgeons abandon themselves to despair, so far as regards all hope of successful treatment, and resort to the extreme measure of prohibition and destruction. We could do this, of course, if we were the merest savages, ready to believe a demon had passed over our cattle, and glad to fall back on our yams and plantains; but we are rather better than savages, and we profess to have some power over the diseases of man and beast. It is a very humbling confession that is made by our medical authorities when they tell us to kill at once, for there is nothing else to be done." "All our epidemics from cholera and smallpox down to scarlatina, measles, and the common influenza, do much less mischief under some treatments than others." (See *Evening Mail* of August 21st.) Such opinions, backed by the knowledge that experience has proved their truth and value, incites us to be up and doing, to use our skill and observation and experience to our utmost ability to combat the dire, but by no means universally fatal, disease, which is apparently extending itself over every country of the world.

We have confined our remarks thus far to the purely therapeutic and remedial measures to be enforced in cases of actual disease. There yet remains an even more important branch of the subject to be noticed, viz., the prevention of the disease and the checking it when once it has shown itself in a district, village, or homestead. To fully enunciate our views on this most important subject would carry us far into the recognised and admitted rules of general hygiene, a science which of late has become generally studied, and which is working out much practical good. Without asserting that fresh air, fresh pure water, absolute cleanliness, wholesome and properly proportioned food, and a regulation of temperature will, combined, form a complete barrier against the attacks of all diseases of a malarious or epizootic nature, we are yet justified in advancing the opinion that these, which may be not incorrectly termed the foundation of hygiene, will so modify and dilute, if we may be permitted the expression, the epizootic "influence" or poison, that the disease will be of comparatively insignificant importance and danger. In proof of this we adduce the numerous instances which have already been brought to notice of dairies in London having wholly escaped the epizootic there, owing to their advanced hygienic state, whilst others in their immediate vicinity have been actually swept away. Too great stress cannot, therefore, be laid on these points as protective against epizootic disease; but should the disease effect an inroad the

question of how to check its further spread is one of the utmost importance. Prompt and complete separation of the healthy from the affected and suspected cattle is to be enforced. To effect this it may be a question as to whether the still healthy cattle should be removed to another and an untainted spot, or the diseased animal taken to some place especially set aside for its reception and treatment. The latter will be the more generally feasible plan; but when it is practicable to remove the unaffected cattle we believe this proceeding the more likely to be successful in checking the disease; this may, however, involve constant change, and thus render its being fully carried out in the great majority of cases impracticable.

In the Mofussil, where occasionally almost unlimited space is at command, this course should, we think, be insisted upon; early separation, however, is absolutely to be carried out, and not only of the animals themselves, but of every article they have come in contact with that can be removed; and fixtures must be at once and thoroughly disinfected. Straw, dung, hay, troughs, and such like, should be removed, burnt, or disinfected; the stall in which the animal stood should not be again used, but thoroughly cleansed out and disinfected; and it would be well were some cheap disinfectant sprinkled over the stalls containing the healthy cattle; night and morning a small quantity of McDougall's disinfecting powder might be dusted lightly over the stalls and sheds. Mr. Murray, in a letter to the *Times*, says he has long adopted this course in his stalls at Manchester with excellent result, and "the cost does not exceed one penny per week per horse.' All animals dying should be buried without a moment's delay, not skinned; and no animals should be allowed to approach the burial-ground until some time has elapsed since the last interment.

Although in the epizootic of Calcutta condition appeared to be no protection, yet, as a general rule, we should expect to find the poor, ill-fed, and dirty cattle more susceptible, and their physical state should be improved as far as possible.

The question of inoculation has been mooted, and by some the experiment has been strongly urged. We learn that it was tried in 100 cases on the Continent, and that all died. (See *Veterinarian* of 1857, page 527, a report of Central Society of Agriculture of France.)

There are accounts also of its having been tried in Africa and Australia, and with success; but, so far as we learn, not for the disease we have been treating of, but for "pleuro-pneumonia," and we believe the two epizootics have been not infrequently confounded. Should the disease again appear, the practice of inoculation may be, and will be, here tried, and the results made known. It would be most hazardous to recommend the experiment, except as an experiment, and one on which we are quite unable at present to risk an opinion.

We would suggest that wherever there are large gatherings of cattle, as at some of our large fairs and agricultural exhibitions, a veterinary surgeon should be officially appointed to inspect all cattle brought to these places, and any cattle suffering from any disease should at once be removed and subsequently dealt with, as the inspector, in consultation with the police authorities, might deem expedient. Should the cattle be condemned to be killed, the owner might be wholly, or in part, remunerated for his loss.

Having thus submitted our views of the nature of the Calcutta epizootic and its treatment, we may conclude this paper by a brief summary.

1*st*.—The cattle disease which assumed an epizootic character in Calcutta in 1864, was not the result of the herding together of cattle at the exhibition; nor did it break out there; it existed in a grave form prior to the exhibition.

2*nd*.—The disease is of a highly infectious and contagious nature, but we have no grounds for concluding that it was imported into the neighbourhood; it had existed in a sporadic form for years before it assumed a true epizootic character.

3*rd*.—The symptoms, progress, and great fatality, all lead to the conclusion that it is the same disease as that known as the rinderpest, which always exists in certain parts of Russia, and is the same epizootic as that at present raging in England.

4*th*.—That it is confined to the bovine race, and is not communicable to other animals, nor to man. (Mr. Floyd's account, however, would rather negative this, as he believes two horses caught the disease and died of it.)

5*th*.—That although no specific has been discovered, yet that judicious and careful treatment promises success. Such treatment consists in mild purgatives, combined with aromatic stimulants, and diffusible stimulants, as ether, nutritious and stimulating drenches, such as beer drenches, counter-irritants, free circulation of air, and scrupulous cleanliness.

6*th*.—That careful hygienic measures are of the greatest importance, such as wholesome food, pure water, fresh air; removal from jungles and other sources of malaria, and, in case of an invasion of the disease, complete and absolute separation of the healthy from the diseased and suspected cattle, the immediate destruction of every article or substance that can hold the infectious properties of the disease, and careful cleanliness of the premises occupied by cattle, and disinfectants scattered on the floors, &c.

We would lastly draw attention that, although the disease we have been treating of is one of the most fatal, it appears to be one the least generally recognised, amongst the several epizootics in India, to which diseases the term ghootee or bussunt, or some other name signifying smallpox, is given, yet that no true variola or smallpox really appears in any of the descriptions. The very fatal epizootic in which vesicular eruptions are observed is probably the eczema epizootica. Pleuro-pneumonia is doubtless common, and the disease which we have treated of is the "rinderpest."

In India we were accustomed to the terms "cattle plague" and "cattle disease," when our attention was drawn to the subject in 1864, and our fears that the epizootic would become more formidable than it did, were aroused. We hear much now of "cattle plague" and "cattle disease" in England; no distinguishing name has been given it; it is not even classified so far has we know, and we have therefore in the want of a better term designated the disease we have treated of as the "Calcutta Epizootic of 1864."

C. PALMER, M.D.,
Presidency Surgeon.

CATTLE PLAGUE REPORT—IRELAND.

First Report to His Excellency Baron Wodehouse, Lord Lieutenant-General and General Governor of Ireland.

May it Please Your Excellency,—The committee appointed by your Excellency for considering what means it would be advisable to adopt to check the cattle plague in

case it should break out in Ireland have carefully considered the report of the commissioners appointed by Her Majesty to inquire into the origin and nature of the cattle plague, together with the minutes of evidence taken by, and the papers laid before, the commission.

By your Excellency's desire the attention of the committee has been especially directed to the following paragraph of the report:

"Before this report is concluded some reference should be made to the peculiar circumstances of Ireland. The disease not having as yet broken out in that country, there is no necessity for the measures which have been recommended for Great Britain. It is still possible, by the adoption of suitable precautions, to avert the calamity from Ireland altogether. The importation of cattle into that country has already been prohibited for some weeks past. Considering, however, the destructive character of the disease, it will not be judicious to rely upon that precaution alone for escaping it. The evidence which has been laid before us leaves little doubt that it can be conveyed by persons who have been in contact with infected animals, as well as by the animals themselves. In case it should, by any accident, be carried over, the Government should be in readiness to eradicate it from any spot in which it may appear; and unless preparations are made for doing so before the plague shows itself, the authorities will hardly be in a condition to act with the necessary speed and vigour when the emergency arises. In Prussia, upon whose eastern frontier the disease frequently appears, a system of precautions has been adopted for stopping its further progress, which have hitherto met with invariable success. It would probably not be difficult to make provision for the application of similar measures to Ireland, and so to secure to it a permanent immunity from the calamity under which Great Britain is at present suffering. But the extreme rapidity with which the disease spreads makes it important that all arrangements for stamping it out, in case of its possible appearance, should be made without delay."—*Report, Royal Commissioners, p.* 18, *paragraph* 6.

In the consideration of this most important question, the committee have directed their inquiries principally to two points:

1st. Whether any precautions in addition to those already taken by the Government are possible for preventing the introduction of the disease.

2nd. The measures that ought, in the opinion of the com-

mittee, to be immediately taken by the Government in case of the disease suddenly appearing in this country.

With regard to the first point, it was stated on good authority to the committee that numbers of drovers and other persons who have been in contact with diseased cattle in Great Britain are in the habit of returning to this country without any precautions being taken for disinfecting their clothing; and great danger being apprehended from this circumstance, the committee recommend:

"1. That no person be permitted to quit Ireland in charge of cattle or sheep without a passport or return ticket, to be obtained from the police authorities at the port of embarkation.

"That such passport or return ticket shall be given for a limited period, within which the person who receives it shall be required, under a penalty, to present himself, on his return, at the office where he received his passport or ticket.

"That upon receiving such passport or return ticket he shall be provided with clothes on payment of a deposit of £5, with which he may proceed to Great Britain, and upon his return he shall receive in exchange his own clothes, and deliver up the clothes provided by the police.

"That on his return, when he claims his own clothes, he is to receive his deposit of £5 on returning the suit lent him."

The committee have had communications on this subject with the Irish Steam-ship Association of a most satisfactory character, copies of which will be found in the appendix, and to which your Excellency's attention is directed.

The committee further recommend:

"2. That the importation of dogs from Great Britain into Ireland be prohibited.

"3. That all boxes, crates, &c., in which carcases are conveyed from this country to England be branded at the port of embarkation, and not permitted to return.

"4. That in order to secure the services of a number of skilled gentlemen to investigate any case of reported cattle plague,

"Ten persons be appointed by the Government to proceed to England immediately for the purpose of studying the disease.

"That six of them should be medical men, two veterinary surgeons, and two practical stockmasters.

"That a communication be made by the Irish Government to Mr. Helps on this subject, who has promised to make the proper arrangements for their instruction.

"That each of these gentlemen should give an undertaking that the clothes they wear during the periods of their study shall not be brought back to this country.

"That these gentlemen should be selected and sent to London during the present week."

With regard to the second point, which is more particularly suggested to the attention of the committee in your Excellency's letter, namely, "The means it would be advisable to adopt to check the spread of the cattle plague, if, in spite of the precautions which have been taken to prevent its introduction, it should unhappily break out in Ireland."

The committee have endeavoured to devise a system as nearly similar as the circumstances of this country will permit to that adopted on the Continent with invariable success, and recommend

"That in the event of the disease breaking out in any district in Ireland that district should be effectually isolated, and all circulation of cattle or sheep within it, or along the roads bounding it, be prohibited."

In order that this system of isolation of the early cases of the cattle plague should be fully and strictly enforced, the committee suggest the following regulations:

SUGGESTED REGULATIONS.

1. Every person having in his possession, or under his custody, any animal having symptoms of the disorder, shall forthwith give notice thereof to the nearest constabulary station of the district within which such animal is; or if within the Dublin metropolitan police district, to one of the superintendents of the metropolitan police.

2. Every constable shall have power, within his district, to enter upon and inspect any premises or place in which he has reason to suspect any animal is labouring under the disorder, and to examine and inspect, whenever and wherever he may deem it necessary, any animal which he has reason to suspect is labouring under the disorder; and such constable shall report the fact of every such visit, with its results, at its next sitting, to the petty sessions court of the district in which such visit has been made.

3. Whenever any constable shall receive or obtain information that an animal is labouring under the disorder, he shall, by the next post, or if possible by telegram, communicate such information to the Under Secretary to the Lord Lieutenant, who shall immediately order a competent person, as inspector, to proceed without delay to the place where the

diseased animal is; and if it appear necessary for the purposes of his inspection, the said inspector shall order such animal to be slaughtered; and he shall, on the same day, forward to the Under Secretary a report, stating whether in his opinion the animal is or is not affected with the disorder.

4. The constable, as aforesaid, shall communicate also to the nearest magistrate the report he has transmitted to the Under Secretary, and if such magistrate shall satisfy himself that there are reasons for grave suspicion that the animal mentioned in the constable's report is affected with the disorder, he shall have power to issue such a conditional order (to be in operation for three days, or until such time as the inspector has reported on the case) as he may think necessary effectually to isolate such animal.

5. On receipt of information to the effect that an animal is affected with the disorder, the Under Secretary shall send without delay to the place where the diseased animal is two or more competent persons, who shall mark out a certain line around such place, and lay down the same upon the ordnance map; the limit of the district enclosed shall be shown by well-defined boundaries; all the district within such boundaries shall be called "an infected district," and such competent persons shall forward forthwith to the county inspector of constabulary a description of such district, and marked, as aforesaid, on the ordnance map.

6. On receipt of such information the county inspector of constabulary shall cause, without delay, to be posted in all public places within ten miles of the infected district a notice describing the boundaries of the same; and from the date of the posting of the first of such notices it shall not be lawful for any person to move from within the infected district any animal whatsoever; but animals, if certified by an inspector to be free from disease, may be slaughtered, and the carcase sent out of the infected district, provided the skins and offal are left within the district; the skins should not be removed without being disinfected, and without the permission of a competent person appointed by the Under Secretary.

7. From the date of the posting of such notice the county inspector of constabulary shall station at all necessary places constables and sub-constables, who shall prevent the egress of all animals from the infected district, and shall prohibit the transit or passage of all animals by or through any part of said district, except in railway trains, and shall, as far as possible, prevent any animals from approaching the boundaries of such district, and shall prevent the egress from such

district of all persons employed in attending upon diseased animals therein, and shall prevent the carrying out of any forage, litter, or manure therefrom.

8. The constables or sub-constables aforesaid shall cause all fæcal matter discharged by any animal affected by the disorder to be collected, so far as it can be done, and all *litter* and other refuse in any house or place in which any such animal may have been located, and all fodder placed before or brought in contact with such animal, to be collected and buried, at least four feet under the surface, or to be destroyed by fire, and the ashes buried.

9. In case the numbers of the constabulary in any district are insufficient for performing the above-named duties, special constables should be employed for the purpose.

10. All dogs should be kept shut up within the infected district.

11. The isolation of any infected district shall be continued so long as any case of the disorder exists within it, and for a period of twenty-one days after the last case of death or recovery, to be certified by the inspector; as also that all proper precautions have been taken for the purpose of disinfection.

12. Every inspector shall have the power to order any animal declared and certified by him in writing to be affected with the disorder to be slaughtered without delay, and buried six feet deep in the ground and covered with lime, in such a spot as he may select; and in the case of burial being necessary at a distance from the place of death, he shall cause the carcase to be disinfected before removal; the bodies of all diseased animals shall be buried unskinned, and the skins scored so as to render them useless.

13. All the expenses of carrying these orders into execution should be defrayed by moneys voted by Parliament. In the case of animals ordered to be slaughtered, as aforesaid, compensation should be given to the owner, equal in amount to two thirds of the value of the animal destroyed, the sum in no case to exceed twelve pounds for each animal. That such compensation should be defrayed out of the poors' rate of the union in which the infected district is situate, save when it would exceed sixpence in the pound on the valuation of the union; in such cases the amount exceeding that rate should be made by a rate-in-aid, to be charged equally on all the unions in Ireland.

14. In order to ascertain the amount of such compensation a written certificate should be given by the inspector, certifying that the animal killed was affected by the dis-

temper, and stating the value of such animal; such order should be brought before the magistrates at the petty sessions of the district in which the infected district is situate, who shall decide as to what sum, not in any case exceeding two thirds of the value of such animal, and in no case exceeding, for one animal, twelve pounds, shall be paid for compensation.

15. As soon as possible after the notices of a district being infected are posted, a census and valuation of the animals in the infected district should be made by valuators appointed for the purpose by the Under Secretary.

16. The infringement of these regulations should be punishable by strong penalties.

17. All persons brought into contact with diseased animals in carrying out these regulations should be ordered to change or cover their clothes, and to take such precautions against conveying infection as the Government may direct.

INTERPRETATION.

"Disorder" to signify the disease known as rinderpest or cattle plague, and no other.

Animal to include "Animals," and to signify cattle, sheep, goats, swine, or horses kept in the same field or house with cattle.

"County inspector of constabulary" to signify one of the commissioners of metropolitan police; and "constable" to signify superintendent of metropolitan police in cases where regulations are enforced within the metropolitan police district.

There may be some points of minor detail which the official experience of your Excellency's advisers will enable them to suggest for fully carrying into operation this system of isolation. In making these recommendations the committee are of opinion that the measures suggested are those best suited for eradicating the disease on its first appearance, and "stamping it out" at once. The committee, however, doubt whether it would be possible to enforce such a system were the disease to become widely spread, or the seats of infection very numerous; but as all experience has shown that similar precautions, if taken in time, have never failed to arrest the progress of this fearful malady, the committee with much confidence submit these suggestions to your Excellency.

The committee, being cognizant of the enormous loss which must ensue should the cattle plague break out in this island, cannot refrain from expressing their strong conviction

that unless the Government are prepared to give immediate effect to these recommendations by an Order in Council, to be followed, if necessary, by a bill of indemnity when the legislature shall meet, it is incumbent upon Her Majesty's ministers to advise Her Majesty to call Parliament together, at the earliest possible moment, for the purpose of legislating upon this momentous subject.

The committee have now adjourned, but they beg to assure your Excellency that they are ready to reassemble whenever their services are required. A copy of the minutes of their proceedings is appended for your Excellency's information.

I have the honour to be,
Your Excellency's obedient servant,
NAAS, Chairman.

Council Chamber, Dublin Castle;
6th day of December, 1865.

ORDER IN COUNCIL DECEMBER, 1865.

AT the *Council Chamber, Whitehall*, the 16th day of December, 1865. By the Lords of Her Majesty's Most Honorable Privy Council. Present: Lord President, Duke of Somerset, Sir George Grey, Bart., Mr. Milner Gibson.

WHEREAS by an Act passed in the session of the eleventh and twelfth years of Her present Majesty's reign, entitled "An Act to prevent until the 1st day of September, 1850, and to the end of the then next session of Parliament, the spreading of contagious or infectious disorders among sheep, cattle, and other animals," which Act has since been from time to time continued by divers subsequent Acts, and lastly by an act passed in the session of the twenty-eighth and twenty-ninth years of Her present majesty, it is (amongst other things) enacted that it shall be lawful for the Lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time to make such Orders and Regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such Order or Orders, of sheep, cattle, horses, swine, or other animals, or of meat, skins, hides, horns, hoofs, or other parts of any animals, and to make any other Orders or Regulations for the purpose of giving effect to the provisions of the said Act, and again to revoke, alter, or vary any such Orders or Regulations; and that all provisions for any of the purposes aforesaid in any such Order or Orders contained, shall have the like force and effect as if the

same had been inserted in the said Act; and that all persons offending against the same shall for each and every offence forfeit and pay any sum not exceeding twenty pounds, or such smaller sum as the said Lords or others of her Majesty's Privy Council may in any case by such Order direct:

And whereas a contagious or infectious disorder now prevails among cattle within that part of the United Kingdom called Great Britain, which disorder is generally designated as the "cattle plague:"

And whereas with a view to check the speading of the said disorder, an Order dated the 23rd of November, 1865, has been made under the authority of the said Acts by the Lords of Her Majesty's Privy Council, consolidating and amending certain Orders previously made for that purpose:

And whereas it is expedient to alter and amend the said Order of the 23rd of November, 1865:

Now, therefore, the Lords of Her Majesty's Privy Council do hereby, in exercise of the powers given by the said Act, so continued as aforesaid, order as follows:—

1. So much of the said Order, dated the 23rd of November, 1865, as defines the local authority in Great Britain, is hereby revoked.

2. Subject to the powers reserved by the Order of the 23rd of November to the Clerk of Her Majesty's Privy Council, the local authority within the City of London, and the liberties thereof, shall be the Lord Mayor; in every borough in England or Wales which is within the provisions of the Municipal Corporation Act, the Mayor; in every county, riding, or division of a county, or liberty, having a separate Court of Quarter Sessions of the Peace in England or Wales, the Justices of the Peace for the said county, riding, or division of a county, or liberty, in General or Quarter Sessions assembled: Provided that no county of a city, or county of a town, or borough, which is within the provisions of the Municipal Corporations Act, shall be deemed for the purposes of this Order part of a county, riding, division, or liberty. The local authority in every burgh or town in Scotland having a Town Council shall be the Provost or other principal Magistrate; and, in any other place in Scotland, the Justices of the county in sessions assembled.

3. All appointments made, notices given, and other acts done by any local authority under and by virtue of the said Order of the 23rd of November, 1865, or the Orders thereby provoked, shall be valid and effectual until altered, varied, or revoked by the local authority hereby constituted, and such local authority shall have and exercise all the powers given by the said Order of the 23rd of November, 1865, to the local authority therein described.

4. Whenever any local authority declares, by notice published in any newspaper circulating within its jurisdiction, that it is expedient for a time to be specified in such notice, that no cow, heifer, bull, bullock, ox, or calf shall, except under such conditions as such local authority shall think fit to impose with a view to prevent the

spreading of the said disorder, be removed from any particular part of the jurisdiction of such local authority to any other part of such jurisdiction; or from any place or places within such jurisdiction to be specified in such notice, to any other such place or places also to be so specified; or from place to place generally within such jurisdiction, or within any specified part thereof; then it shall not be lawful for any person to remove any such animal in contravention of such notice: provided always, that nothing contained in this clause of this Order shall make it unlawful for any person to send or carry any such animal by railway through or out of such jurisdiction, or to send or carry any such animal if brought by sea from any place out of Great Britain into such jurisdiction, to the nearest convenient railway station, for the purpose of carrying it through or out of such jurisdiction.

5. Any local authority may from time to time renew, revoke, alter, or vary, all or any part of any notice published or to be published by him or them, or any previous local authority within his or their jurisdiction, under the powers given under this or any former Orders, either absolutely or under such conditions as to such local authority may seem proper, by a further notice to be published in the same manner as such notice is required to be published.

6. The notice required by Section 8 of the Order of the 23rd of November, 1865, to he given in England to the Clerk of the Justices acting in and for a petty sessional division of a county, shall hereafter be given to the Clerk of the Peace of such county.

7. This Order shall be in force from the 3rd day of January next until the 1st day of March next, and no longer, unless continued by some further Order.

8. Every person offending against this Order shall, in pursuance of the said Act, for every such offence forfeit any sum not exceeding twenty pounds which the Justices before whom he or she shall be convicted of such offence may think fit to impose.

(Signed) ARTHUR HELPS.

ORDER IN COUNCIL JANUARY, 1866.

At the *Council Chamber, Whitehall*, the 20th day of *January*, 1866. By the Lords of Her Majesty's Most Honorable Privy Council. Present: Lord President, Lord Privy Seal, Earl Russell, Lord Stanley of Alderley, Sir George Grey, Bart., Mr. Milner Gibson, Mr. Bruce, Mr. Goschen.

WHEREAS by an Act passed in the session of the eleventh and twelfth years of Her present Majesty's reign, chapter one hundred and seven, entitled "An Act to prevent until the 1st day of Sep- "tember, 1850, and to the end of the then session of Parliament, "the spreading of contagious or infectious disorders among sheep, "cattle, and other animals," which Act has since been from time to

time continued by divers subsequent Acts, and lastly by an Act passed in the session of the twenty-eighth and twenty-ninth years of the reign of her present Majesty, chapter one hundred and nineteen, it is (amongst other things) enacted that it shall be lawful for the Lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time, to make such Orders and Regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such Order or Orders, of sheep, cattle, horses, swine, or other animals, or of meat, skins, hides, horns, hoofs, or other parts of any animals, or of hay, straw, fodder, or other articles likely to propagate infection; and to make any other Orders or Regulations for the purpose of giving effect to the provisions of the said Act, and again to revoke, alter, or vary any such Orders or Regulations; and that all provisions for any of the purposes aforesaid in any such Order or Orders contained, shall have the like force and effect as if the same had been inserted in the said Act; and that all persons offending against the same shall for each and every offence forfeit and pay any sum not exceeding twenty pounds, or such smaller sum as the said Lords or others of Her Majesty's Privy Council may in any case by such Order direct:

And whereas a contagious or infectious disorder now prevails among cattle within that part of the United Kingdom called Great Britain, which disorder is generally designated as the "cattle plague:"

And whereas with a view to check the spreading of the said disorder, an Order, dated the twenty-third of November, one thousand eight hundred and sixty-five, has been made, under the authority of the said Acts, by the Lords of Her Majesty's Privy Council, consolidating and amending certain Orders previously made for that purpose; and the same has since been altered and amended by a subsequent Order, bearing date the sixteenth day of December, one thousand eight hundred and sixty-five:

And whereas it is expedient to alter and amend the said Orders of the twenty-third day of November, one thousand eight hundred and sixty-five, and the sixteenth day of December, one thousand eight hundred and sixty-five, respectively: Now, therefore, the Lords of Her Majesty's Privy Council do hereby, in exercise of the powers given by the said Act so continued as aforesaid, order as follows:

I. The power given by the said Orders to any local authority, as defined by the said Order of the sixteenth day of December, one thousand eight hundred and sixty-five, to declare by notice published in any newspaper circulating within its jurisdiction, and also by notice published in some newspaper or newspapers circulating within the county or counties bordering upon the county within which the jurisdiction of such local authority is situate, that it is expedient, for a time to be specified in such notice, that animals, as defined by the said Order of the twenty-third day of November, one thousand eight hundred and sixty-five, or some specified description thereof, shall not, either absolutely, or except under such conditions as such local authoritiy shall think fit to impose with a

view to prevent the spreading of the said disorder, be brought from any other part of Great Britain into any place within his or their jurisdiction, shall extend, from and after the day on which this present Order comes into operation, to all raw or untanned hides and skins, and all horns or hoofs of any animals as defined as aforesaid, or of any description thereof to be specified in any such notice, except such hides, skins, horns, or hoofs, as are directly imported into the United Kingdom from India, Australia, South Africa, or America, and to the offal of any such animals as aforesaid, and also to all dung, hay, straw, fodder, or litter, likely to propagate infection; and it shall not be lawfnl for any person, in contravention of any such notice, to bring or send any hide, skin, horn, hoof, offal, or other article as aforesaid, except in accordance with such conditions as aforesaid, from any place in Great Britain beyond such jurisdiction into any place within such jurisdiction; and the copy of any such notice shall be sent forthwith by the local authority by which it is made, to the Clerk of Her Majesty's Privy Council, and shall be published by him in the London Gazette: Provided always that nothing contained in this clause of this Order shall make it unlawful for any person to send or carry any such hides, skins, horns, hoofs, offal, or other articles as aforesaid, by railway, through such jurisdiction; and provided also, that nothing contained in this clause of this Order shall make it unlawful for any person to bring or send, with the licence of any two Justices acting in and for the jurisdiction to which such notice applies, any such hides, skins, horns, hoofs, offal, or other articles as aforesaid, from any land and premises in his own occupation, and beyond such jurisdiction, to any other land or premises in his own occupation within such jurisdiction, during a time to be specified in such licence.

II. The power given by the said Order of the sixteenth day of December, one thousand eight hundred and sixty-five, to any local authority as thereby defined, to declare, by notice published in any newspaper circulating within its jurisdiction, that it is expedient, for a time to be specified in such notice, that no cow, heifer, bull, bullock, ox, or calf shall, except under such conditions as such local authority shall think fit to impose with a view to prevent the spreading of the said disorder, be removed from any particular part of the jurisdiction of such local authority to any other part of such jurisdiction; or from any place or places within such jurisdiction, to be specified in such notice, to any other such place or places, also to be so specified; or from place to place generally within such jurisdiction, or within any specified part thereof; shall extend, from and after the day on which this present Order comes into operation, to all animals, as defined by the said Order of the twenty-third day of November, one thousand eight hundred and sixty-five, or any specified description thereof; and also to all raw or untanned hides and skins, and all horns and hoofs of any animals as defined as aforesaid or of any description thereof to be specified in any such notice, except such hides, skins, horns, or hoofs as are

directly imported into the United Kingdom from India, Australia, South Africa, or America, and to the offal of any such animals as aforesaid, and also to all dung, hay, straw, fodder, or litter likely to propagate infection; and it shall not be lawful for any person to remove any animal, or any hide, skin, horn, hoof, offal, or other article as aforesaid, in contravention of any such notice: Provided always, that nothing contained in this clause of this Order shall make it unlawful for any person to send or carry any such animals, or any such hides, skins, horns, hoofs, offal, or other articles as aforesaid, by railway, through such jurisdiction, or to send or carry any such animals, or any such hides, skins, horns, hoofs, offal, or other articles as aforesaid, if brought by sea from any place out of Great Britain into such jurisdiction, to the nearest convenient railway station for the purpose of carrying them through or out of such jurisdiction.

III. The aforesaid Order, bearing date the sixteenth day of December, is hereby amended by omitting the words "or out of" from the proviso at the end of the fourth clause of the said Order; and the said proviso is to be read as follows, "provided always that nothing contained in this clause of this Order shall make it unlawful to send or carry any such animal by railway through such jurisdiction, or to send or carry any such animal, if brought by sea from any place out of Great Britain into such jurisdiction, to the nearest convenient railway station, for the purpose of carry ing i through or out of such jurisdiction."

IV. Any notice given by virtue of this present Order may be renewed, revoked, altered, or varied, from time to time, in the manner provided by the said recited Orders, with respect to notices given under and by virtue thereof.

V. This Order shall come into operation on the twenty-fifth day of January, one thousand eight hundred and sixty-six, and shall be in force thenceforth until the first day of March next, and no longer, unless continued by some further Order.

VI. Every person offending against this Order shall, in pursuance of the said Act, for every such offence forfeit any sum not exceeding twenty pounds, which the Justices before whom he or she shall be convicted of such offence, may think fit to impose.

(Signed) ARTHUR HELPS.

VACCINATION.

MANY persons interested and others occupied in the treatment of cattle having sought for information on the mode of conducting vaccination, it has been deemed desirable to issue the following suggestions towards facilitating the performance and promoting the success of the operation.

Mode of performing the operation.

The vaccination of the cow with the lymph *naturally* and *casually* developed on the species is, in general, a successful operation, but unfortunately such lymph is rarely procurable.

The *retro-vaccination* of the cow with *humanized* lymph is a different affair, and to ensure but a moderate amount of success, when indiscriminately performed, needs more attention to many particulars than is generally supposed.

In the first place it is necessary to shelter the animal from cold and wet.

In the next place it is desirable to employ recent liquid lymph, conveyed in capillary tubes, or contained in well-developed vesicles on a child's arm.

It is important also to select certain regions for the operation.

Those regions are the most eligible which possess the thinnest skin, are void of hair, not likely to be subjected to friction, and yet afford facility of access in operating and inspecting.

In the milch cow the back part of the udder, the thin lax skin on each side of the vulva, or in close proximity to its cutaneous margins, are parts most eligible. In the dry cow and in the female calf the teats and udder will be available, although the parts above mentioned are more convenient of access. In the male the perinæum and the scrotum afford the best sites. But in individuals difficult to manage the inside of the ear, or some part of the neck, or behind the shoulder denuded of hair, and possesing some of the above-named requisites, may be chosen.

The modes of operating, like those on man, vary, each having its advocates and advantages:

First. By incision.

Secondly. By puncture.

Thirdly. By scratching or abrading the cutaneous surface.

1. *Incision* has advantages as regards celerity of execution and facility of introducing the infecting, as well as abstracting the resulting lymph. It may be effected by a small scalpel, or short bistoury, or, still better, by the Danish vaccinator.*

The incision should be made from half to three quarters of an inch in length into the skin just deep enough to make the edges of the wound slightly to gape. Wait till the oozing of the blood has ceased, then apply the lymph into and upon the edges of the incision. The Danish vaccinator resembles a small "*Valentin's* knife," or the steel pen usually found in a pocket case of mathematical instruments—only this has a cutting edge. The instru-

* An instrument in general use in Denmark, procurable at a small expense in London.

ment being well charged by applying its point to the liquid lymph discharged from the capillary tube, or oozing from the punctured vesicle on the child's arm, is made to penetrate the skin to the requisite depth, not drawing much blood. The lymph by this means is deposited at the time of making the incision. With a little practice half a dozen incisions are quickly made and charged.

2. *Puncture.*

This is best suited to the practice of inserting the end of a doubly charged vaccine point, which may be broken off from the shaft, and allowed to remain in the puncture for a quarter of an hour.

3. *Scratching.*

This is tedious, but in thin skins is often advantageous for the application of lymph preserved on large or small ivory points. The lympth, previously moistened, is rubbed off the point into the scratched surface. From four to six clusters of scratches should be made. These, if executed by a large modification of Weir's vaccinator, are done with much more celerity than with a single pointed instrument.

Results of the Operation.

About the fourth or fifth day after the operation a slight redness and elevation with some hardness and heat may be discerned. These phenomena gradually but not uniformly increase till the sixth or seventh day, when a small central crust fills the incision and plugs the punctures.

On the scratched surface the exuded and dry lymph occupies the furrows, or more or less overspreads the abraded surface.

The vesicles now become more and more elevated and extended till the tenth or eleventh day, when they flatten and rapidly decline, more or less covered with a thick blackish-brown crust.

Unless the skin be thin and very fair, no areola is visible, but the margin of the vesicle is felt hard and tense. When the areola is visible on a fair skin it is often not more than three or four lines in width.

Although the vesicle assumes the form usual in man, as determined by the mode of operating, its margin is, from the thickness of the skin of the animal, solid, and if punctured will yield only blood. Lymph can be procured rarely before the ninth or tenth day, and then only by removing carefully the central crust, and waiting patiently for its exudation through the original puncture.

Vesicles raised by very slight punctures or superficial abrasions of the cutis resemble more closely those on man, and yield lymph earlier, but they are liable to earlier rupture or abrasion, and yield but a scanty supply of turbid lymph.

It not unfrequently happens that the stage of progressive papulation is indistinctly marked or apparently arrested, so as to lead to the apprehension of failure, when suddenly the characteristic form of the vesicle appears, and it advances to maturity.

It is not rare, however, to find among several papulæ some of them arrested in their progress, and prove abortive. When this event befalls the major part or the whole of the punctures or incisions, a repetition of the operations in the same site may nevertheless succeed.

During the progress of the disease scarcely any constitutional symptoms are observed; sometimes an acceleration of the pulse may be detected.

The retro-vaccine lymph obtained from these operations, little as it is, should be used as far as possible for other vaccinations.

CATTLE PLAGUE RETURNS.

THESE returns do not profess to give the total number of cases which have occurred in Great Britain, but only those which have been ascertained from the official information received at this office from inspectors, whether appointed by the Clerk of the Council or by the local authorities. The divisions of England are those of the census. Column 1 only records the cases reported as having commenced during the weeks indicated by the headings; "back" cases being added to column 2.

CENSUS DIVISIONS.	1 Number attacked.			2 Result of Reported Cases from the commencement of the disease.				
	Week ending Jan. 20.	Week ending Jan. 13.	Week ending Jan. 6.	Attacked.	Killed.	Died.	Recovered.	Remaining.
Metropolitan Police District.	21	38	67	7,418	3,134	3,378	313	593
South-Eastern Counties.....	33	30	107	4,786	1,477	2,674	414	221
South-Midland Counties.....	860	681	786	9,506	1,769	6,277	632	828
Eastern Counties.....	315	265	260	7,587	2,808	3,749	496	534
South-Western Counties.....	82	40	59	1,044	256	551	112	125
West Midland Counties	444	264	251	2,938	473	1,759	242	464
North Midland Counties ...	442	565	455	4,109	522	2,770	307	510
North-Western Counties.....	3,738	2,465	1,964	15,743	570	10,322	944	3,907
Yorkshire.....	1,314	1,508	2,028	16,833	882	10,333	2,536	3,082
Northern Counties	290	216	175	2,330	560	1,163	244	363
Monmouthshire and Wales...	542	661	319	4,435	97	3,286	448	604
Scotland	1,960	2,510	2,649	30,369	3,587	17,643	5,143	3,996
Totals	10,041	9,243	9,120	107,098	16,135	63,905	11,831	15,227

Of the Counties in England, exclusive of the Metropolitan Police District,—

2 Counties remain free from the disease.
20 „ show an increase of 2,089 cases during the week.
15 „ show a decrease of 605 „

Showing a total increase during the week in the Counties of England, of } 1,484 cases.

The Metropolitan Police District shows a decrease during the week of 17 cases.

Of the Counties in Wales,—

10 Counties remain free from the disease.
1 „ shows an increase of 49 cases during the week.
1 „ shows a decrease of 168 „

Showing a total decrease during the week in the Counties of Wales, of } 119 cases.

Of the Counties in Scotland,—

11 Counties remain free from the disease.
7 „ show an increase of 176 cases during the week.
9 „ show a decrease of 726 „

Showing a total decrease during the week in the Counties of Scotland, of } 550 cases.

Of the Counties in England, Wales, and Scotland, 23 Counties remain free from the disease.

28 Counties show an increase of 2,314 cases.

25 Counties and the Metropolitan Police District show a decrease of 1,516 cases.

Showing a total increase during the week ending January 20th, 1866, in England, Wales, and Scotland, of 798 cases, as compared with the week ending January 13th, 1866.

ALEXANDER WILLIAMS, Secretary.

Veterinary Department of the Privy Council Office,
2, Victoria Street, Jan. 25.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY NEWCASTLE MEETING.

THE CATTLE PLAGUE, OR TYPHUS.

By D. Embleton, M.D.

(*Continued from* vol. xxxviii, p. 872.)

October 12, 1865.—Symptoms as observed in Newcastle-upon-Tyne by the Inspectors, Messrs. Wilkinson and Stephenson.

In the following observations the symptoms detailed are taken from milk cows. As a rule the disease is insidious in its attack; the person who feeds and milks the animal will first observe a slight falling off in the appetite and in the secretion of milk. Nothing more will be observed for twenty-four or thirty-six hours, when, upon examination, the vagina will be found congested; the mouth will have assumed a light pink hue; it is hotter than natural; the salivary secretion is increased; and the appetite and milk continue to decrease. In a few hours more the vulva and anus will be found contracted, and the vagina highly congested and covered with a small soft white eruption. About this time or a little later the gums and insides of the lips are found to have small clusters of *hard* white spots upon them, very like grains of find sand beneath the mucous membrane. On the palate will be found a few raw-looking patches. The eyes are partially closed, the conjunctiva injected, and a copious discharge flows down over the cheek; in other cases the eyes remain open and bright without discharge. There is not much discharge from the nostrils, but from the mouth it is copious. In nearly all we have observed shivering in the hind quarters. The temperature of the body is variable; some are deathly cold, others are moderately warm, with the exception of the extremities, which are always cold; in some the horns have been very hot. About the third day the whole mouth becomes covered with a soft eruption, which, together with the epithelium, is easily removed, leaving a raw surface; the breath becomes very offensive; there is a slight cough, and the breathing is quick, accompanied with a moan. The bowels at first are constipated, but about the second or third day diarrhœa sets in, which continues to the end, the evacuations being very offensive, fluid, and mixed with blood and mucous; in some near death we have seen pure blood passed per rectum, and after death we have seen blood flowing from

both anus and nostrils. Up to the present time we have had three cases with emphysema beginning at the top of the shoulders and spreading over the whole body, the urine is not appreciably altered either in quantity or colour. The symptoms gradually increase in severity, and as death approaches the animal becomes very restless, the pulse, which up to this time has been very little affected, now becomes imperceptible, and in many cases the animal is unable to rise; its head is thrown back upon the shoulder; the breathing is stertorous, and a comatose state ensues. There are some symptoms which have been observed in London, where the disease first broke out, namely, the pulse being nearly imperceptible in the very first stage, the skin hot in places, particularly between the legs, and these places afterwards being covered with an eruption, followed by sores. In no case have we observed these, neither are the symptoms of general weakness so apparent, and in consequence we have not observed the loss of power and the staggering which have been given as prominent symptoms of the disease in London.

Duration.—As a rule the disease proves fatal on the sixth day; but we have seen a few cases that have lived longer; we have also seen some cases prove fatal in forty-eight hours. We believe the incubative stage to be from seven to twelve days. Various modes of treatment have been adopted by the different owners, and out of about two hundred cases we have seen eight recoveries, which we think were referable to constitutional causes and good nursing, rather than medicinal treatment.

In Hindson's byre, which originally contained twenty-two cows, and where the disease has been so bad that there is now only one left, that one animal has retained its health throughout, and seems proof against the disease. Two instances have occurred in which the disease established itself during an attack of pleuropneumonia, and the animals died showing marked symptoms of both diseases. Another peculiarity of the disease is the odour given off from the animal, which, when once experienced, cannot readily be forgotten.

H. E. Wilkinson,
Clement Stephenson.

Notes of post-mortem examinations, &c., October 5, 1865.—Yesterday, at Mr. Stephenson's invitation, went with him, Mr. Russell, and Mr. L. Armstrong, to the Tyne Manure Works of Mr. Burrell, to be present at the *post-mortem*

examination of three cows, two of which belonged to Mr. Ratcliffe, Oyster Shell Lane, and one to Mr. Roddam, all these had died of the disease now prevalent in the byres of the town.

Beside the above, there were Dr. Donkin, Mr. G. N. Clark, and other gentlemen.

Cow No. 1.—Had looked ill on the 29th September, hung head, eat only half her usual amount of food, and was very thirsty; on the 30th was worse, eating scarcely anything, her milk, which the day before had sensibly diminished, stopped altogether, she was dull and spiritless, her ears hung back, the nose and eyes ran with discharge and became red, the mouth was hot and sore, and a slimy discharge came from vagina; diarrhœa became excessive and frequent, as if after the use of severe purgatives—thin and watery, though at first of natural colour.

Much high-coloured urine was passed the first day or two.

(RATCLIFFE.)

Post-mortem examination at 4 p.m., eight hours after death.

Body swollen, rather tympanitic.

Eyes red and injected, cavities of nose the same, traces of considerable discharge from both eyes and nose were on the hair; lips and part of mouth aphthous, and showing red spots or patches here and there; tongue little changed, parts between base of tongue and epiglottis reddish.

On opening larynx and trachea, intense aphthous inflammation, of both, especially the former; the interior of larynx and upper part of trachea of deep dark red, and partly covered with aphthæ, which, coalescing, took the form of false membrane, and could be scraped off, leaving an intensely red and mucous membrane, the epiglottis and the œsophagus at the top only a little reddened.

The redness was followed down the trachea and bronchi quite into the substance of the lungs; the bronchi were found full of bloody and frothy mucus, and an exudation of blood was found in many of middle-sized bronchi, and that blood was firmly coagulated, the surface of the bronchial mucous membrane everywhere intensely inflamed, but not aphthous or ulcerated.

The right lung darker than the left, which was uppermost as the animal lay. There was a good deal of emphysema on the surface and edges of the lungs, the left was mottled irregularly with patches of red, much deeper than is natural. The pleura was unaffected.

The heart was soft, and contained chiefly fluid blood; about the tendinous cords were entangled ragged, black coagula, both ventricles contained a good deal of blood. Emphysema was distinct in the loose cellular tissue about the heart, and also about the roots of the lungs and around the kidneys.

In the abdomen, the serous membrane was healthy, as were the kidneys. The intestines were not distended, neither were the stomachs. Several of the laminæ of the third stomach presented irregular patches of congestive redness, these, when held up against the light, were found highly injected with red vessels, but at the entrance to the fourth stomach the mucous membrane became suddenly and uniformly of a deep, brownish, muddy red, thence the same colour extended over the whole surface of the fourth cavity and into the small intestines, approaching to the hue of incipient gangrene.

The mucous membrane was much softened and very vascular, networks and dots of blood and arborescences of vessels being general; here and there slight ecchymoses had occurred.

Of the vagina, the lower nine inches were inflamed and bloody, above that space little damage. Two fœtuses, four or five inches each, were found in the uterus.

Cow No. 2, examined at 5 p.m.; began to be ill on 30th, and died this day (October 4), at 8 a.m. Was more affected in bowels than No. 1, and had less running at the nose.

Post-mortem examination. The base of the tongue and space between it and the epiglottis spotted and aphthous, the mucous membrane coming off very easily; interior of larynx and trachea intensely reddened, but not aphthous as in No. 1, the trachea and bronchi showing frothy and bloody mucus in large quantity, often plugging them up.

Some semi-coagulated blood, and well-marked inflammatory redness down to the small ramifications existed on the mucous membrane. No pleuritis or peritonitis. Lungs less congested than in No. 1. Black patches were observed under the lining membrane of the ventricles of the heart, about the attachments of many of the cordæ tendinæ; these patches were in reality ecchymoses, and the substance of the heart was much too soft, and of bad, dull colour.

A good deal of emphysema about the kidneys, which in their interior appeared healthy.

The stomach and intestines were not examined, owing to the increasing darkness.

Cow No. 3 appeared well on the 1st, and, on the 2nd, Mr. Stephenson was sent for; she died this forenoon, at 11·30; passed about a pint of blood by the rectum.

Post-mortem examination. Spots or aphthæ about gums,

and red patches about the roof of mouth; space between tongue and larynx red and spotted; the mucous membrane peels off readily.

Larynx and trachea scarcely reddened, the bronchi also pale, containing frothy mucus.

Lungs emphysematous, large, puffed out; no trace of inflammation of serous membranes.

Fluid blood in large quantity in both ventricles, clots entangled in the strings of the valves.

A good deal of ecchymosis had occurred under the pericardium into the muscular tissue around the base of both ventricles: heart soft and flabby.

It was remarked that the blood in all the three cows examined was unusually fluid, nearly everywhere.

The liver appeared somewhat enlarged in No. 3, but nothing else remarkable as to this organ was observed in any of the three cows.

In the third stomach almost every fold presented large patches, or one very large patch, of dark redness, as if apoplexied; every patch was very vascular, however, and the lining membrane came off with greater than the usual facility.

The fourth stomach, and the intestines generally, very highly inflamed, and in many parts of a deep olive green, in some parts the contents were bloody; the light, however, failed before it could be minutely examined.

October 5th.—At the Asylum, Bath Lane, a cow of Ratcliffe's had been slaughtered almost as soon as she was observed to be ill, and the carcase, divided, was awaiting the examination of the inspectors, before being sold or condemned.

Messrs. Stephenson and Wilkinson performed the examination of the viscera, &c., and we found as follows:

The mouth of the cow was unaffected, as also were the top of the œsophagus and the larynx; the trachea began to be slightly reddened below the larynx; the bronchi were decidedly inflamed, the smaller ones being most so. The lungs were somewhat emphysematous, and too dark in colour. Rumen not affected; third stomach showed most of its laminæ marked with large red patches, which seemed to spring from their attached border, and to run broadly upwards towards the free margin; when held up to the light, these patches contrasted strongly by their intense vascularity in networks, with the rest of the leaf which appeared as if without vessels; on some of the leaves the papillæ presented a bright red colour, standing up prominently from a dull red surface.

The fourth stomach presented a dull redness, which became

of a deeper colour towards the pylorus; at the pyloric end were various pale discolorations in mottled spots, and rounded or oval-shaped ulcerations of various sizes, up to about three quarters of an inch in extent, many of the more advanced ulcers being marked by the effusion of dark blood upon their surfaces.

The jejunum was very vascular for a long distance, the vascularity varying in intensity here and there; in the worst parts many little ecchymoses were visible.

The ilium resembled the jejunum in condition, only it was of a darker hue.

The vagina was aphthous at the orifice and red, but pretty clean higher up; a few red vascular spots existed on the mucous membrane of the uterus.

THE SIBERIAN CATTLE PLAGUE; OR, THE TYPHOID FEVER OF THE OX.

By William Budd, M.D., Clifton.

(*Continued from* p. 875, vol. xxxviii.)

If men and women affected with typhoid fever were condemned to lie through the whole course of the disorder on a bed saturated with the hourly accumulating discharges from the diseased intestine—and this is precisely the case of the sick cattle—we know enough, from what happens when there is any the most distant approach to these conditions, to be sure that few indeed of those exposed to the contagion would escape it. And who does not see that instances of mediate transmission in various ways, and through various channels, would, of a certainty, be much more common than they are now? For myself, I have no doubt that the disease so contracted would affect a much more malignant type, and would in the same degree be at once more fatal and run its course more rapidly. And if it be true, as many surmise, that the length of the latent period varies with the amount of the initial dose of the specific poison, it is not unreasonable to suppose that this period, also, might be materially shortened.

With the termination of this account of the propagation of the disease in the natural way, we reach a point in which the human interest of our subject becomes consummate;—in that cattle plague—exact correlative of human typhoid fever, as I have shown it to be—may be inoculated like smallpox. This

is a fact the importance of which, in all its relations, it is simply impossible to exaggerate.

First, in regard to the source of the virus which is used for this most remarkable of operations. I have already stated that the source generally had recourse to is the discharge from the nose. We have seen also that the specific disease of the intestine, which is the one mark of the malady, is repeated with all its specific characters in the lining membrane of that organ. The disease of the intestine has, on the other hand, been equally shown to be the exact pathological equivalent of the follicular disease of human typhoid.

I have placed the several steps of this induction before you once before, but its importance is so great that, even at the risk of wearying by repetition, I will set it down once more here. For the sake of clear apprehension, as well as for the objects of criticism, the propositions of which it consists will be best stated in the simple form of a series of syllogisms.

1. The follicular disease of the intestine in cattle plague and that in typhoid fever are exact pathological equivalents.

2. The follicular disease of the intestine in cattle plague and the follicular disease of the nose in the same malady are identical.

3. The follicular disease of the nose is, in its turn, the exact pathological equivalent of the eruption of smallpox; seeing that, like that eruption, it furnishes a virus by which the disease may be artificially propagated.

4. The follicular disease of the intestine in typhoid fever, therefore, must (as we had already seen on other grounds) be also the exact pathological equivalent of the variolous eruption.

Look at it in whatever aspect we may, this conclusion appears to be irresistible. Seldom or ever, perhaps, in medicine at least, did a truth so fertile in practical consequences of the highest order admit of being stated in words so few, and of such severe simplicity.

The order of events which follows the inoculation of the epizootic exactly corresponds with that which follows the inoculation of smallpox. First comes a latent period, during which the poisonous germ, too minute to exert any sensible action on the living body, appears to lie dormant. Next comes the development of the disease with all its specific characters, including that most remarkable of all, the power to confer immunity from all future attacks.* If we

* See for all details regarding this operation and its results, the 'Russian Government Report.'

add that in Rinderpest, as in variola, the inoculated disease is, as a rule, much milder than the disease when taken in the natural way, we may be absolutely sure that the whole process is the same in the two cases, and that what we actually see with the eye in the one is the perfect image of what occurs in the other. But what we do see in watching the inoculation of variola, is the development from a germ impalpably minute of a new crop of the same specific poison, often sufficient in amount to inoculate with smallpox myriads of other subjects.

Here, then, in results open to the eye, and which rival in clearness and precision those which form the basis of the physical sciences, the question to which I referred at the outset as the great question of all is answered for us.

It is in the body of the living ox, and by that most specific of processes which constitutes the disease itself, that the morbific agent is bred and multiplied, which sweeps through the herd with such fatal rapidity. By a limitation which is none the less remarkable because an exactly similar limitation applies to many another member of the same family group, this agent, prolific as it is in the body of the ox, has no power to breed in that of any other creature. Though other animals be made of flesh and blood like this, the flesh and blood of this one species furnish the only soil in which this seed will germinate. To see the bull—the sculptor's favourite type of physical strength—stricken down and done to death by an invisible agent, which neither in earth nor air gives any other token of its presence, is, in every sense, a remarkable sight. To see countless herds smitten at once by the same fatal stroke, is still more so. But what infinitely enhances the scientific interest of the spectacle is, that this agent, deadly as it is to this paragon of living strength, is entirely without power over any other living thing. The fact has not been put, as it readily might be, to the final and decisive test of inoculation; but, as it now stands, the evidence of it appears to be sufficiently conclusive. In the most fatal outbreaks of cattle plague, no other live stock, no wild denizen of the fields or Steppe has ever been known, in a single instance, to suffer from it.

Especially remarkable is the fact that man himself is so entirely proof against it. Not merely because men, in ministering to the sick cattle, are constantly brought into the closest contact with the specific poison; not even because, under the form of beef, they are constantly converting the flesh of the ox into their own; but because men are themselves subject to the action of another specific poison, so

nearly kindred in its nature to this, that the most characteristic effects of the two can scarcely be distinguished one from the other.

Once more, it is the case of sheep's smallpox and human smallpox over again. It is, in fact, because these very relations recur in so many instances of the same sort that they are so singularly important. In either case, each animal is proof against the pest whose very counterpart is so deadly to it. What can show in a more striking way than this double contrast, how intensely specific in their nature these morbifications are, and how intensely specific the conditions needed for their growth and development?

If aught else were required to cap this already consummate climax, it would be the fact, which I need scarcely say is also a generic fact, that oxen which have once passed through the disease are for the remainder of life proof against it. Not only do they never take it again in the natural way, but experience has shown that they cannot even be inoculated with it. The disease may have occurred in the sucking calf, and the subject of experiment may be this same calf grown to the stature of an ox, on whose horns time has engraved some fifteen or twenty rings.

Physiologists teach that in the course of these physiological changes no single atom of the original flesh and blood is left. And yet, amid all these transmutations of matter, the new matter inherits from the old the immunity acquired in that one first attack. The morbific agent, once so prolific in the body of the very same creature, has now no power even to germinate in it. So subtle—as I have elsewhere observed—so incomparably specific are the conditions on which the generation of these poisons depends.

Bred in the living ox by a process so peculiar, and bred there only under conditions so subtle and specific as to transcend the power of language to follow or define them, has this morbific agent any other source? Can it, as some seem still to think, spring up spontaneously? The product of a disease which only one agent in nature can set up, and that again only in the yet virgin body of a single species, is it also the product of the common chemical processes which surround both man and ox in the external world?

After what has gone before, this is a question which it seems hardly worth while to discuss. The least objection to such a supposition is, that it is entirely gratuitous, and that the known facts are more than adequate to explain all the phenomena of the case. It is, besides, a supposition which has not even the pretence of coming before us in a definite

form. No one of the few writers of any consideration who still hold to it has given the remotest suggestion, even, as to the nature or *locus in quo* of the hypothetical process of which this morbid poison is supposed to be the spontaneous offspring. No one has ventured here to start the preposterous notion that the specific poison of Rinderpest—generated by the disease itself though it be—is generated likewise by the natural dung of the same animal.

Gratuitous on the one hand, and without definite form on the other, this figment of the uncultured mind is wanting in the two primary conditions which science has a right to exact of any hypothesis before she condescends to its serious examination. I may add that it is entirely without any real or solid foundation in fact.

After what we know of the actual mode of genesis of the morbid poison, how severe, how exact, how binding, how positive should be the evidence that it has another and entirely different mode of genesis. To admit of no other possible interpretation is, in the face of this knowledge, the only warrant for such a belief that deserves even to be entertained. But, instead of this, the only plea put forward for it at all is the simply negative fact, that, now and then, in countries in which the disease is not indigenous, and somewhat more often in the Steppe where it is so, outbreaks of it arise whose germ cannot be traced to any distinct and specific origin. In other words, the only plea for this belief consists, as I have already said on a former occasion, "in our inability to follow with the eye the continuity of a chain whose links are known to be invisible."

It is a plea that, if valid at all, would by parity of reasoning, prove mushrooms and thistles to be bred spontaneously; and, by a single blow, would sweep to the winds the one great result of Pasteur's labours.

But, if this hypothesis, besides being at once gratuitous and vague, be irreconcilable with the known mode of genesis of the morbific agent, it is, if possible, still more hopelessly irreconcilable, as I have already hinted in a former page, with the geographical distribution of the pest.

A single fact, in addition to those I have mentioned before, will put this in the clearest light. I have said that Rinderpest is unknown here. In the latter part of the last century, by one of those striking incidents which are so full at once of teaching and of deep and various warning, we ran a great risk of having this disease naturalized among us. In 1744, its germ was introduced into England. Dr. Layard, who wrote an essay on the disease, seems to have ascertained that it was

brought to us by an English tanner, "who had purchased a parcel of distempered hides in Zealand very cheap, because they were forbidden to be sold and ought to have been buried." From this parcel of hides there issued a power never known in these islands before, which, rapidly reinforced as it went by its own offspring, grew to such a height as to slay myriads of oxen. For ten whole years this epizootic raged with unheard-of severity. In the third year of the disease, 80,000 oxen affected with it were killed; and nearly twice that number died of it. £135,000 were, in the same year, paid out of the Treasury to farmers in compensation for slaughtered cattle. In Nottinghamshire alone, 40,000 head perished in six months; and in Cheshire, upwards of 30,000 in the same space of time.

So great a price did the nation pay for the little lot of distempered hides imported by that sordid and ignoble tanner.

But if the mode in which the disease was introduced into England be instructive, the means by which it was finally extinguished were not less so. By order of the King in Council, the following stringent measures were prescribed and rigidly enforced:

1. All infected animals to be killed and buried entire, with their skins on, slashed from head to foot.
2. All hay and straw used about the sick animals to be burnt.
3. The sheds occupied by them to be cleansed and fumigated, and not to be re-occupied by sound cattle for the space of two months.
4. No recovered animal to be allowed to mix with others for a month after convalescence.
5. No diseased cattle to be driven to fairs or markets, nor their flesh to be used as food for dogs.
6. No healthy cattle to be removed from a farm where the disease had prevailed, in less than a month after its disappearance.

To insure the more certain execution of these measures, Government undertook to pay forty shillings for every ox, bull, or cow which was killed, and ten shillings for every calf, with a corresponding price for their skins.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

THE EFFECTS OF ABSTINENCE AND INSUFFICIENT ALIMENTATION ON ANIMALS.

By M. Colin, Professor at the Veterinary School, Alfort.

(*Continued from p.* 60.)

I have now come to the second part of my dissertation, which treats of insufficient nutriment. After having considered the great fact, and the manner in which the animal organism is maintained at its own expense, we must examine what takes place when alimentation is insufficient; for this is, after all, only partial abstinence, which may, like the first, be followed by the most fatal consequences. These two states are in different degrees the cause of death, and either alone or in conjunction with the malady, point out the common danger, and indicate in what they resemble or differ from each other.

Insufficient alimentation is very common, often unavoidable, and sometimes fortuitous, circumstances to which, in general, not enough importance is attached. We can distinguish several kinds. There is, physiologically, insufficient alimentation. 1st. When the food is not abundant enough, or innutritious. 2nd. When, although abundant enough, it is not able to compensate for the excessive losses caused by work or other means. 3rd. When, by old age or some organic debility, digestion is weakened and unable to elaborate the amount of matter necessary to maintain the equilibrium. In a pathological point of view, there is then insufficient alimentation to a greater or less degree. 1st. During the progress of acute diseases, or even of chronic affections, where only a small quantity of food can be allowed. 2nd. Every time that convalescence is prolonged, the patient being much reduced, he is unable to digest or assimilate enough to repair the lost material. 3rd, and lastly. When the deep organic changes impede the work of nutrition. Under all these circumstances of unequal gravity, because unequally susceptible of modification, insufficiency of the alimentation has the same ultimate result. It compels the organism to take from its own substance the necessary aliment. It is like a besieged place, the resistance of which can theoretically be calculated

with mathematical exactness; it will hold out in direct proportion to that which it can furnish, and in an inverse ratio to that which is wanted. In other words, the resistance will be in proportion to the provision, and as the consumption of it is more or less rapid. It is the same in total abstinence; and we will find that these two states are easily reduced to the same physiological formula. In the designs of nature insufficient alimentation is for many animals an event of ordinary occurrence. All the herbivora of our temperate regions, and more so those of cold climates, suffer from dearth of provender in the winter. Then vegetation is suspended, nothing is left on the ground but a scanty remnant of dried-up vegetables, and animals are forced to content themselves with the bark and twigs of small trees and shrubs, and a few tufts of dry grass, a ration unfitted to support life.

The provision of fat which has been accumulated during the abundant season is then put in requisition, and emaciation is the consequence. No doubt some even perish before the return of the summer.

The carnivora, likewise, have to pass through periods of penury and suffering, greater or less. It is to protect them from the inconvenience of this insufficient alimentation, that a great number of species of all classes, of mammifera, birds, fishes, and even insects, are subject to the laws of migration, well known to all naturalists. Some only descend from the mountain into the plain, where the temperature is milder, and vegetation, consequently, is not entirely suspended; and to this the migration of the herbivora is mostly limited. Some antelopes in the arid plains of Africa emigrate in troops towards those regions which are covered with green vegetation. The marten, the hermine, the lemming, leave the cold mountains of Scandinavia for the neighbouring plains. But birds more particularly emigrate from longer distances. The palmipedes of the north retreat at the beginning of winter toward regions where the ponds and streams are not frozen over: hence the passage of the wild geese and cranes. The swallow, when the air is depopulated of insects, returns to hot countries; the snipe forsakes the high mountains which are early covered with snow for our forests and plains. This is a dire necessity which the animal menaced by hunger cannot avoid. It must depart, whether weak or strong on the wing; whether it likes or dislikes rapid journeys. The nightingale, which arrives here at the time of the flowering of the hawthorn, leaves us early in September; the other small insectivorous birds, well fattened during the summer, expatriate themselves about the

same time, at the risk of becoming the victims of the birds of prey. The quail, heavy with fat, must find strength enough to cross the Mediterranean on the wing. Those which are not good flyers are obliged to get away as best they can. The water-hen, the rail, the penguin, and those which have stunted wings, escape either by walking part of the distance, or by swimming. But however weak, sick, or the produce of late hatches, all must obey the instinct of self-preservation, or run the risk of being starved. The heron who would remain faithful to his marshes would have to wait a long time before his prey disengaged itself from the frozen swamp, and this would be the case with many others. As to those who cannot periodically change, like the bear, and the slow hedgehog, the marmotte, the mole, the dormouse, and all the others to which the winter is a season of dearth, there is but one resource, that of hybernation, so as to check the activity of the loss, and thus the provision which would have been expended in a few weeks is made to last for several months. Our domesticated animals, which the foresight of man ought to have protected from dearth of food, are, nevertheless, subject to it, principally where agriculture has not made much progress, and, consequently, the provisions for the winter are limited. They find themselves in the same condition as the wild animals which do not emigrate. The penury of food has, therefore, to them the same results. This is what occurs in our farms which are not well cultivated. There are great numbers of cattle that have laid on flesh during the summer. The winter sets in, and with it the penury of forage; and the racks are filled with only straw. The farmer thinks it is a good thing to economise his hay. If an ox weighs 500 kilogrammes (1102½ lbs.) at the beginning of November, he will be reduced to 400 (888⅗ lbs.) at the end of April. If the farmer has five pairs of oxen, he has in reality only eight, one fifth having been consumed. It will be said that when the spring has arrived, and with it the succulent vegetation, these oxen will soon recover the 100 kilogrammes (220½ lbs.) lost. No doubt the fine season and the green fodder will soon restore in these oxen the loss they have sustained during the winter, but, nevertheless, the loss remains the same; with the forage that each of the oxen will consume to recover the lost weight, they would have increased to 600 kilogrammes (1326 lbs.). Neither has the manure heap much benefited, the atmosphere having carried off nearly the whole in the shape of watery vapour and carbonic acid gas. This statement is not exaggerated when I say that by insufficient hybernal regimen there is a loss of 100

kilogrammes (220½ lbs.) per head. I have kept within limits; for those who know how things are conducted in most of the provinces, are well aware that a great number of domestic animals, and more particularly the ox tribe, lose one fourth and sometimes one third of their weight during the winter. Hence, we may lose the weight of an animal in any four or even in three. These results are easily explained by what has been above stated. Physiologically considered, insufficient diet is nothing less than partial abstinence. Thus, in this case, the alimentation which we have designated as internal combines with the external alimentation in proportions which can be calculated with the greatest exactitude. Animals, whether deprived or not of food, need for the performance of their functions, and particularly for the maintenance of heat, a certain amount of organic matter. If this, or part of it, is deficient in the daily ration, it must be of necessity taken from the animal itself, derived, as it were, from its own substance; or if the ration is one half, one third, or one fourth inferior to what is required, this half, third, or fourth, must be taken from the provisions of the animal economy. The emaciation is, therefore, precisely in proportion to the degree of the insufficiency of the alimentation. We have seen, as stated above, the herbivorous animal when subjected to total abstinence becomes carnivorous. No longer feeding on fodder and grain, it devours its own flesh and fat. At present we have to deal with an omnivorous animal, which feeds partly on fodder and partly on flesh and fat; to complete its ration the regimen has become mixed. In an economical point of view, this combination is a mistake, for that which the animal borrows from itself, namely, the flesh and fat, is worth more than the fodder which is saved. The insufficient alimentation is not only prejudicial inasmuch as it is the cause of emaciation; it has other consequences, on which it is necessary to dwell a little, particularly in respect to young animals, weak subjects, females in gestation, or when giving milk. If there is a period in life in which insufficient alimentation is more particularly pernicious, it is certainly during the tender age. Excessive alimentation is for the young the great secret of the rapid and complete development of the animal, and the principal agent in the amelioration of the different breeds. All breeders are well aware that, to produce fine stock, they must be allowed for a longer time an abundance of food of the best quality from the period of their being able to eat. It is greatly owing to this that we are indebted for those wonders of productions, the secrets of which were unknown in ancient times.

By parsimoniously feeding cattle only a pitiful breed is produced, which shows indelible traces of an organism incomplete, languishing, and often interrupted. See, for instance, those young ruminants which have been weaned a few weeks after birth, before their weak organs had acquired the strength to digest the coarse grass or provender. On leaving the teats of the mother they begin to emaciate, their flanks become hollow, their muscles flabby, and the fat which was but just deposited becomes absorbed. At that very moment they use part of their substance to complete an insufficient ration, not in quantity, but for want of a more complete elaboration. With them, all suffers in a more or less evident manner, from the surface of the body to the deepest recesses of the organs. The coat loses its lustre, the skin becomes dry, the interstices of the muscles are hollow, all that is soft becomes reabsorbed, the liver is small and of a black colour, some organs alone seem to have continued their functions when all was stopped. The skeleton, the growth of which depends in great part on mineral substances, seems to have suffered less than the rest. The stomach and intestines are sensibly dilated, their expansion, which is mechanical, is independent of the activity of the work of nutrition. If this state of things is continued for a short time, the equilibrium which ought to exist between the different organic systems is broken; the muscular and vascular systems remain in the background; the cellular and the lymphatic take the upper hand, and the germ of debility is developed; the faculty of resisting disease is weakened, and the animal often becomes suddenly the prey of parasites and helmia, which soon accomplish what insufficient alimentation had begun.

But under ordinary conditions these periods of penury so prejudicial to young animals are not of long duration; they are followed by periods of abundance, during which the injury done to the system is to a certain extent repaired. The growth of our domestic animals is the same as that in wild animals, that is, by intermittence. In summer the herbivora acquires size, lays on fat; then in winter it uses part of the muscles and fat to complete its insufficient ration. The evolution is thus shackled in a more or less irremediable manner; for during these times of arrest, and even impoverishment, the work of ossification is going on, and when once the epiphyses are soldered the growth of the bones becomes impossible. There is no doubt that insufficient alimentation has on the adult less prejudicial effects. It is only in the aged to their actual condition, while in the young it is so, to their actual and future development. Cows in calf, when not well

fed emaciate directly after calving, on account of the secretion of milk. A progressive emaciation represents sometimes one sixth, fifth, or one fourth of the weight of the animal. It is always according to the supplement to the ration that this loss is effected, as much to supply the wants of the respiration as for the secretion of milk. Everything leads to the belief that part of the lost fat goes to the milk, for, according to Liebig, the quantity of this matter eliminated with the milk and the dejection is often greater than that introduced into the system by the food. Perhaps the nitrogenous matter of the vascular system (effete matter) contributes to the formation of caseum. Thus, the animal laying on fat toward the latter end of gestation, only puts in reserve milk for the provision of the young animal at the time it will be able to consume it. This is the more likely, as some wild animals, like the bear, for instance, have young in winter, at a time when food is very scarce; a time when, consequently, respiration and the secretions borrow the most of their organic substance, whatever it may be. Cows, when lactation is prolonged beyond measure, are reduced at the end of a few years to a state of emaciation similar to that which results from abstinence or a long malady. The effects which insufficient alimentation has in animals, under other physical conditions, as, for example, when losses are occasioned by hard work, cannot readily be compensated for by ordinary regimen. This occurs in working oxen at the sowing time; although well fed, still they grow lean; their internal provision is expended to complete the amount of the product always limited to the digestion. As to the consequences which insufficient alimentation produces in those animals which have been deteriorated by organic disease, or old age, they have peculiar gravity. The altered or used up organs can no longer digest or assimilate enough to compensate the daily losses; it is necessary that the organism should give up every day a little of its stores. It is fortunate, then, if, after a certain atrophy, the plastic strength suffices for the maintenance of the remainder. But if the organism is called upon to furnish this contribution for too long a time, the fatal moment soon arrives when nothing more can be ceded; what remains of the substance has nothing which is susceptible of reabsorption; the remnant matter ceases to be less capable of being repaired, and is even consumed by the vital force. This is the extreme degree of atrophy, which is so often seen in amphitheatres, where the last remains of the physical miseries are often displayed.

From the preceding, insufficient alimentation only differs

from total abstinence in degree. In both cases, the organism borrows from its own substance matter which is to be destroyed by respiration and the secretions; only, in the one case, the whole is taken from itself, and, in the other, from a part. Insufficient alimentation and total abstinence threaten the organism with ruin, and tend by the same means to identically the same results, viz., inanition and death, when the body, as has been shown by Chossat, has lost about half its prescribed weight, and often before that. It is, therefore, necessary, in hygiene and therapeutics, never to lose sight of this fact, and to bear in mind that if they are both energetic means of treatment, they must, like all dangerous agents, be employed with discernment and care.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JAN. 10TH, 1866.

PRESENT:—The President, Professors Spooner and Gamgee, Messrs. Broad, J. C. Broad, Brown, Burley, Ernes, Field, Harpley, Lawson, Mavor, Moon, Silvester, Thacker, Wilkinson, Withers, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

The *Secretary* reported that four candidates, late pupils of the Royal Veterinary College, London, had been admitted members of the body corporate. Their names were then read, together with those of the examiners and *ex-officio* members who were present. The *Registrar* reported the following deaths, viz., Henry John Fitter, Indian Army, diploma dated May 11th, 1848; William W. Heanley, Leighton Buzzard, diploma dated February 11th, 1830; William Lucas, of Atherstone, Warwick, diploma dated January 7th, 1812; Richard Green, Lutley, Stourbridge, diploma dated February 9th, 1837; Thomas Gabriel, Davenport, diploma dated May 17th, 1822; Robert Smith, Ipswich, diploma dated July 9th, 1829; James Clark, Musselburgh, Midlothian, diploma dated August 6th, 1833; J. Dennis Harrison, Preston, Lancashire, diploma dated June 29th, 1820; William Shields, Arbirlot, Forfarshire, diploma dated April,

1830; George Simpson, Arbroath, Forfarshire, diploma dated April 20th, 1842; Joseph Skea, Aberdeen, diploma dated April 22nd, 1843; William Miles, Cork, diploma dated June 28th, 1836; J. Bucktin, Middleham Bedales, diploma dated April 16th, 1831; and J. Pattison St. Clair, Morpeth, diploma dated April, 1835.

The *Registrar* also reported that only fifty copies of the register remained on hand, and that three years had elapsed since the publication of the last list of the members of the body corporate.

It was moved by *Professor Gamgee*, and seconded by *Mr. J. C. Broad*—

"That a new register be published at the end of the present session, and that the same be duly advertised in the journals."—Carried.

The correspondence on the subject of the proposed "Veterinary Medical Association Act" was then read, upon which a lengthened discussion ensued, as to the Bill being presented in its present form.

The *President* stated that Mr. Wilkinson, the solicitor, had informed him that the Bill could be altered even after it had been presented to the House, if it should be deemed advisable to do so.

He then put the question to the Council as to whether the Bill should or should not go before the House in its present form. Upon a division, the majority were in favour of its being presented.

The *Finance Committee* reported that they had examined the vouchers and receipts of payments during the preceding quarter, and found them correct. The quarterly balance-sheet of the Treasurer's account was read. The liabilities for the quarter ending December 31st amounted to £83 17*s.* 7*d.*, which the Committee recommended should be discharged. They also suggested, "That, at the future meetings of the Finance Committee, a notification be sent to the Treasurer, requesting his attendance, and that the banker's pass-book be produced."

It was moved by *Mr. J. C. Broad*, and seconded by *Professor Spooner*—

"That the Report be received and adopted."—Carried.

Cheques were ordered to be drawn for the current expenses.

The *Treasurer* intimated to the Council the desirability of transferring the funds of the College to one of the local banks in his immediate neighbourhood, as being more convenient for the transaction of business. His request was acceded to.

Professor Spooner gave notice of the following motion—"That the salary of the Secretary be increased £50 per annum."

By order of the Council,
WILLIAM HENRY COATES,
Secretary.

THE LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

(*Continued from p.* 61.)

ESSAY ON VILLITIS, BY W. HAYCOCK, M.R.C.V.S.

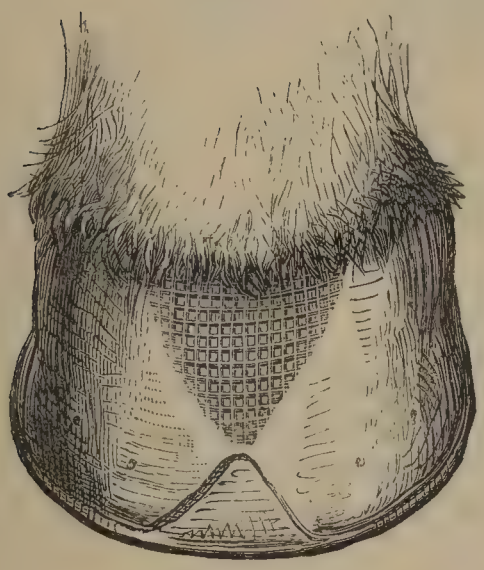
MR. PRESIDENT AND GENTLEMEN,—It is not my intention to trouble you with any very lengthy remarks upon the present occasion. The form of lameness I shall introduce to your notice is very likely one with which most of you are familiar; nevertheless, in several instances which I could name, I have known old practitioners of fifteen and twenty years' standing overlook it. I am not aware of any individual hitherto having described it.

The malady in question I propose to designate VILLITIS, or, in other words, inflammation of the vascular villi of the coronet. The disease generally commences in a very slow or insidious manner. It is more common amongst the horses of Manchester than amongst horses which are confined in their labour to the country or to soft ground.

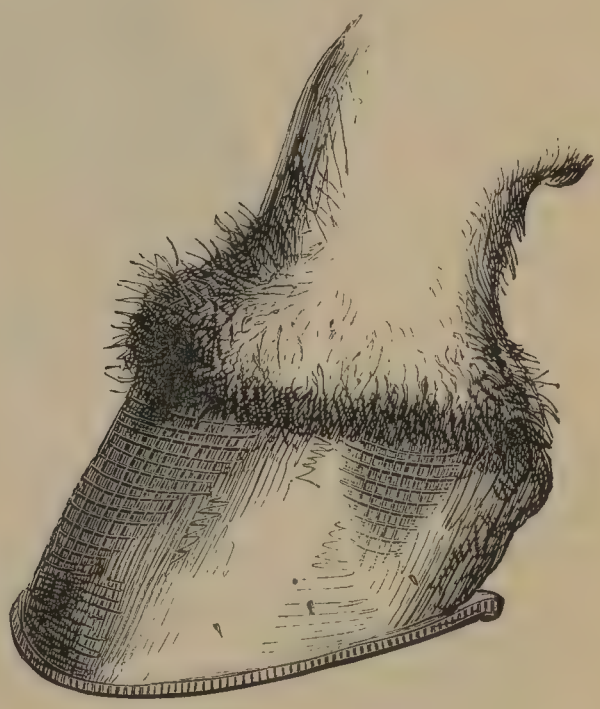
The disease seldom or ever commences suddenly (at least in all the cases I have seen), or in a very acute form. On the contrary, as I have stated, it generally commences in a very slow, insidious manner, and passing as slowly from a slight to a severe form. In two instances which I well remember, the effects of the disease became so severe that it was deemed advisable to have the subjects destroyed. The malady is not peculiar to aged horses, but it is the most common amongst them. I have occasionally treated horses five and six years of age thus affected. The disease is more with the fore than with the hind; sometimes it is associated with sandcrack, and in other cases with old, inveterate, and mangy forms of grease. More frequently, however, it is not so associated. When the disease becomes thoroughly established, the hoof of the foot will present a rather peculiar appearance. The horn tube becomes split, both perpendicularly and transversely, in a manner precisely similar to figure No. 1.

Those portions of the horn which present this peculiar split and crossed condition crumble away in a kind of dirty, gray-coloured powder, and sometimes this wasting and crumbling away of the horn become so extensive as to reach the posterior surface of the horny laminæ passing through this surface, and blood in consequence will ooze to the surface of the foot. Hoofs so affected are rendered brittle, and large portions become readily broken away. It is only in the far advanced stage of the disease that we behold the morbid condition now described to exist.

No. 1.



No. 2.



In some cases villitis may exist for a long period before the crossed, seedy condition of the hoof becomes strongly marked. Villitis is more rapid in its development upon the feet of stallion horses than upon the feet of mares and geldings. As the malady advances from one stage to another, the vascular villi of the coronet become enlarged, similar to what I have endeavoured to represent in figure No. 2.

In the older and more advanced forms of the disease this enlargement extends all round the coronet at its junction with the hoof; the appearance presented to the eye under such a condition is that of a soft roll. When the disease is associated with grease, the appearance which the foot very speedily presents becomes similar to figure No. 3.

When the superficial tissues around the coronet are affected with grease, it is rare for *villitis* to present itself in a complete or aggravated form; the mangy, grease-like condition of the skin appears to modify the action of the latter.

Lameness in a slight degree, especially with heavy horses, is usually present from the first. The early signs are—the patient goes feelingly, and, as the vascular villi become more enlarged, the

lameness will be found to become more decisive and marked. In addition to the above, the swelling is greater, and it is tender upon

No. 3.

pressure. In the more advanced stages the lameness presents characters of a very clearly-marked nature; the patient places the feet forward (when both are diseased), and treads heavily upon the heels and posterior region of the feet, very similar, in fact, to when laminitis is present.

The pathognomonic symptoms of villitis are, *enlargement of the vascular villi of the coronet; tenderness of such enlargement upon pressure, associated with stepping more or less upon the heel of the foot.*

Causes.—The causes are predisposing and exciting.

The predisposing causes are heaviness or bulk of the animal itself. Bad shoeing is also another predisposing cause; more especially if associated with a naturally weak foot.

The principal exciting causes are constantly stamping of the feet upon the hard pavement with heavy loads. The continual digging, so to speak, of the toe of the foot into the ground when employed for purposes of draught. This is especially an exciting cause of villites, in conjunction with the granite streets of Manchester.

Treatment.—Rest is the first great essential. Second, close attention to the state of the shoe. A round shoe will be found to be the best, which should be properly seated. A leather sole should be used in association with a round shoe, where the diseased foot is a flat one. The heel of the shoe should either be level with the toe, or in some instances the animal will stand most at ease with the toe of the foot slightly higher than the heel. In both cases six or eight weeks' rest will be found necessary.

Recourse may be had to cooling lotions—such as cloths made frequently wet with cold water. Lastly, blisters and irritants of the

same nature may be employed. The treatment here recommended is for the more acute forms of the disease. For the milder forms, attention to the shoeing and the application of an ointment of corrosive sublimate, consisting of ʒj of finely powdered sublimate, mixed with lard ʒiv, will be found effectual. The hoof should be treated as follows:—Rasp the powdery mass away, and apply a good hoof ointment liberally to the horn, twice or thrice a day, as long as the patient is under treatment.

Mr. P. Taylor then proposed that Mr. Haycock be elected President for the ensuing year, which was seconded by Mr. A. Gibson.

Mr. Haycock acknowledged the compliment, but proposed that Mr. Cartwright should take the presidential chair.

Mr. Cartwright thanked the Society, but declined the honour. The President's proposal was then unanimously carried.

The election of Vice-Presidents followed.

Mr. Greaves proposed, seconded by Mr. W. Challinor, that Mr. Whittle be Vice-President. Carried.

Mr. T. Taylor proposed Mr. Howell, seconded by Mr. Haycock. Carried.

The *President* also proposed that Mr. J. Haslam be elected as Secretary, which was seconded by Mr. A. Gibson, and carried.

The Treasurer's account was then read, found correct, and passed.

It was proposed that Messrs. Lawson, Greaves, and Haycock, form a Committee for carrying out the Annual Dinner; of which due notice will be given.

Mr. Whittle proposed, which was seconded by Mr. A. Gibson, that the enforcement of all fines be at once commenced.

A vote of thanks was then proposed by *Mr. T. Taylor* to the President, Mr. P. Taylor, for the able manner in which he had filled the office. This was seconded by Mr. J. Taylor, and carried with acclamation.

Mr. W. Challinor proposed a vote of thanks to the Secretary; seconded by Mr. J. Buckley, and carried unanimously.

Also, a vote of thanks to the Treasurer was proposed by Mr. T. Greaves, seconded by Mr. A. Challinor, and carried.

To the Vice-Presidents were likewise voted thanks, to which Mr. Howell responded for all.

JAMES HASLAM, *Secretary.*

SECOND REPORT.

THE Lancashire Medical Association held its Third Annual Meeting, and Second Annual Dinner, on Wednesday, January 11th, 1866, when the President for the ensuing year—Mr. Haycock—delivered the inaugural address at the Royal Institution, Mosley Street, Manchester.

The address, among other things, treated of the following subjects: viz., the education and training of the veterinary pupil; the present state of veterinary literature; the rinderpest in cattle; and,

lastly, the art of horseshoeing, and its relation to the veterinary profession. These subjects were carefully and amply commented upon in a masterly manner, and were listened to with marked attention.

The following gentlemen, with several others, were present:—Dr. F. R. Fairban; Dr. R. M. Man; P. Taylor, Esq., late President, and D. McTaggart, Esq., President of the Yorkshire Association; also Messrs. Freeman of Hull, Whittle of Worsley, C. Simpson, T. Taylor, Gibson, and Brooks of Manchester; also Cartwright of Whitechurch; Wilson and Bryan of Liverpool; Wood of Wigan; Taylor of Oldham, and Howell of Rochdale.

Letters of apology for non-attendance were read from several gentlemen; and, among them, from Professor Spooner and Professor Dick.

After the delivery of the address, the members adjourned to the Queen's Hotel, Piccadilly, Manchester, where an excellent repast was provided, to which ample justice was done. The usual loyal and patriotic toasts were drunk, and the evening passed in the most friendly and convivial manner.

James Haslam,
Honorary Secretary.

Veterinary Jurisprudence.

NEWTON ABBOT COUNTY COURT.

(*Before* Mr. Serjeant Petersdorff, Judge.)

(*Continued from* p. 65.)

Mrs. Lavis continued.—The horse remained with her about one week after the date of sale. On the day that her son took the mare into Torquay witness saw Mr. Hodge at his house, when he asked her whether she had seen her son. Witness said no. Mr. Hodge said that he had sent him up the town to sell the black mare for any sum he could get for her; he also said that if the mare was not taken out of the town that she would be shot, and the boy put in the lock-up. On going up the town witness met her son talking to a man named Head about the mare. Witness told her son that he should not sell the mare; she was, however, sold, and in about a week after, by her desire, it was returned to her farm. The mare was then tendered to Mr. Bartlett, and he refused to take her. The money, the proceeds of the sale, was paid witness by Mr. Hodge, except £130, which was paid by Mr. Johns.

Cross-examined by Mr. Francis.—Did not remember the day on which the mare was bought, but thought it was on a Thursday or Friday. The horse was purchased by her son, who left her house

with one horse, which he rode, and £16 in money. On the road he bought another horse, and afterwards "jocked" the two horses and some money away for the mare which was sold in the sale. Did not see the mare when she came home, as it was night, but saw her the next morning; when witness saw the animal it was not running at the nose, and it looked perfectly healthy. Witness said to her son that she did not like the man of whom the mare was bought, and thought that there was something the matter with it.

Mr. Carter.—That is not evidence.

His Honour.—You must not let her run on.

Mr. Francis.—I find it very often difficult to stop a woman's tongue, your Honour. (Laughter.)

Cross-examination resumed.—The first thing that was done to the mare was to harness her to some timber to see if she would pull, and after that the mare was harnessed in a waggon to try her. Knew that Mr. Dyer saw the mare a day or two after she was brought home; was quite certain that he saw her the first week; thought he saw her the first day at Torquay. Did not know whether Mr. Dyer applied any blister to the mare; did not have any conversation with Mr. Dyer about the mare. Her (witness's) husband died on the 2nd of March last; there was a distress in the house, but there was no cause for it. Saw Mr. Hodge about a week or ten days after her husband's death, and it was arranged that she should see Mr. Johns. Had never given Mr. Johns a bill of sale; could swear that she never had; was aware that the bills announcing the sale of her effects stated that they were sold under a "bill of sale;" saw that statement when the bill was published, but it was no such thing.

Mr. Francis [holding the copy of a bill of sale].—I ask you to be particular; did you not, on the 6th of April, in Mr. Bird's office, solicitor, Okehampton, in the presence of his clerk and Mr. Johns, sign a bill of sale, whereby you made off all your effects to your brother-in-law, Mr. Johns?

His Hononr.—I don't think you are entitled to put the question in that manner. You may hold the document in your hand and ask her whether she signed it or not.

Mr. Francis.—I thought the original document was here, this is only a duplicate.

His Honour.—Then it is not evidence.

Mr. Francis.—Under the Act of Parliament ——

Mr. Carter.—It is only secondary evidence.

His Honour.—A copy would not be evidence for the purpose of contradicting a signature.

The original document being produced, the witness acknowledged that it was her signature affixed.

His Honour.—It is a bill of sale of all your effects?

Witness.—Yes, your Honour.

Mr. Francis.—And of all future effects.

Cross-examination resumed.—Mr. Johns did not give Mr. Hodge instructions to hold the sale, as he did not see him before he met

him at Newton. Did not know how it was that the mare was not taken away at once after the sale; did not know until after the sale that Mr. Bartlett objected to take the mare, but knew the reason the same night. Mr. Bartlett told her the cause, and witness said that it was a false report. Witness heard that he would not take the mare because she was glandered. It was agreed in witness's presence that the mare should be examined by Mr. Dyer, her veterinary surgeon, and Mr. Burton, Mr. Bartlett's veterinary surgeon, in order to determine whether the mare was saleable or not. The mare was not, however, examined according to appointment, as a gentleman had informed witness, that if she had the mare examined, that she would be taking it under her protection, and that as the animal had been sold to Mr. Bartlett, it was his property. Did not know what sum her son wanted Mr. Head to pay for the animal after it had been refused by Mr. Hodge. Did not say to Mr. Head that he should have the mare for £5 if he would give it. Did not know whether Mr. Johns asked Mr. Hodge for the money, the proceeds of the sale, in the evening of the day on which the sale was held, and abused him because he could not get it. Certain cheques [produced] were made out in witness's presence after the sale in Mr. Johns's name, made payable to order. Did afterwards want some cheques to be altered from "order" to "bearer," as she could not get the money. Went to the bank with Mr. Hodge, as she could not get the money without his being present.

His Honour.—Did Mr. Johns, after he had received the money at the banker's, hand it over to you?

Witness.—Yes.

By Mr. Carter.—Mr. Johns was a brother-in-law, and he became bond for twelve months' rent which she owed her landlord. Mr. Johns paid £50 for her of her own money; was never indebted one farthing to him. Considered the document which had been produced to have been an agreement between herself, Mr. Michelmore, and the incoming gentleman; was never told that the document was a bill of sale.

Mr. Francis.—Who told you it was simply an agreement between the parties you have mentioned?

Witness.—Mr. Johns told me so.

By Mr. Carter.—The rent was paid by the crops which were growing on the land; had not put her name to the document previous to the date that she gave instructions to sell her goods to Mr. Hodge.

His Honour thought it was unnecessary to go into the subject, as it did not bear upon the point at issue.

Mr. Carter said that the character of his client was somewhat at stake, and that he was examining her upon that point in order to set it right.

Mr. Francis said that part of his defence would be that his client was employed by Mr. Johns, and not by Mrs. Lavis.

Daniel Johns, Jacobstowe, near Okehampton, deposed that he went to Lower Rocombe and managed the funeral for Mrs. Lavis,

who was a relative of his. He became bond for some rent, and a bill of sale was given him, but Mrs. Lavis was ignorant of the real nature of the document when she signed it; she thought it was merely an agreement.

By His Honour.—Neither the effect nor character of the document was explained to her.

By the Foreman.—Never took possession of the property under the bill of sale; Mrs. Lavis remained in possession.

Cross-examined by Mr. Francis.—He arranged with Mr. Bird to get Mrs. Lavis to sign the bill of sale without knowing its true nature. Could not say that he did or did not correspond with Mr. Hodge until he saw him at the Globe Inn, Newton, which was on the 4th of April. Did not give Mr. Hodge any instructions with respect to the sale on behalf of himself; Mr. Hodge had his instructions from Mrs. Lavis. Could swear that he had not given her son orders to write the letters produced, giving Mr. Hodge instructions respecting the management of the property on the farm; his son frequently wrote without his instructions. Demanded the money from Mr. Hodge on behalf of Mrs. Lavis, as he did not think it right that he, Mr. Hodge, should take so much money away to Torquay with him.

Mr. Buckland, auctioneer, Newton, stated that he was instructed to sell a black mare by Mr. Carter; he advertised the sale, and sold the animal on a market-day in the market-place. The mare was sold for a sum of £7 10*s.*; and after deducting expenses this left a net of £6 0*s.* 6*d.*

By Mr. Francis.—If the mare was sound she was worth forty guineas, if not, he could not say much about her. Had been an auctioneer of some years standing, and it was not his custom to affix the conditions of sale to his catalogue.

Mr. Francis asked what the custom amongst auctioneers was.

Mr. Carter submitted that that was no evidence.

Mr. Francis.—I apprehend it is.

His Honour.—What is the use to submit that which is wholly inoperative?

Mr. Francis thought that it was not necessary that an auctioneer should be up in all the legal technicalities belonging to his profession.

His Honour.—It is necessary that he should have such legal knowledge as shall enable him to do the thing for which he is employed.

Mr. Francis.—I am going to show you the universal custom with regard to sales by auction.

His Honour.—The custom is a wrong one, and consequently illegal. I can never admit evidence of custom against that which legally ought to be done.

Mr. Carter.—It will save time, your worship, if you will take my objection and dispose of the question at once.

Mr. Francis again pleaded, that it was not a part of an auctioneer's duty to be up in all the technicalities of his profession,

and asked permission to question the witness with respect to custom.

Mr. Carter.—I object to the question being put.

By Mr. Carter.—Witness had annexed the conditions of sale to his catalogue since this action had been brought, although it was not his practice to do so before.

Mr. Carter.—You have done what is legal and right since (laughter.)

Witness.—Yes.

Robert Lavis, son of the plaintiff, deposed, that his brother purchased the black mare which had been sold by Mr. Hodge. Was present when Mr. Bartlett bought the mare, and did not believe that she had the glanders, or any other disease at the time of sale. A gentleman named Pitts, of Exeter, bid within 10*s.* of the sum bid by Bartlett for the mare.

Cross-examined by Mr. Francis.—Took the mare to Mr. Dyer's, because the man of whom she was bought came back the same night, and said there was something the matter with her. Mr. Dyer did not blister the mare or give her anything, and there was no running at the nose. Mr. Dyer told him that they were to take care of the mare. Did not see Moses Small, the gipsy, at the sale, and he, Small, did not mop out the nostrils of the mare before she entered the ring. Was not aware that he told Mr. Hodge that Moses Small had done so. The gipsy had been in the field with the mare. Mr. Hodge told him when he went into Torquay that the mare would be shot, and that he would be put in the lock-up, and this so frightened him that he did not know what he was doing. Was two hours bargaining with Head whilst in that condition (laughter). His mother did not say that the horse might be sold for £5, or give him any permission to sell the animal.

By his Honour.—Had not his mother's authority for selling the mare.

James Farley, farmer, Woodland, deposed, that on the 30th May last, he bought a black mare of Mr. Buckland, in the Market-place, Newton. The mare was sold by auction, and was knocked down to him for £7 10*s.* The mare was a very fine one when he bought her; she had some disease, but did not believe that it was the glanders. He had worked the mare with other horses, and she had not communicated any disease to them. At the time when he gave evidence at Torquay he would not have taken £30 for the mare. He had kept the mare hard and worked her hard since he had had her. The mare died about a fortnight since; she appeared perfectly well up to the time of her death, and the day previous to that the boy said he could not catch her. Could not tell what had caused her death.

By Mr. Francis.—Had worked the mare with other horses when ploughing; always kept her alone, and not in a field with his other horses. Consulted Mr. Dear, veterinary surgeon, Ashburton, because the mare had a running at the nose. The mare got poorer in condition whilst he had her, and when she died he buried her, instead of selling her for dogs' meat.

This was the case on behalf of the plaintiff.

Mr. Francis then addressed the jury, and in the course of his remarks said that the case presented by Mr. Carter had been presented in a manner to suit his own purpose, but at the same time he (Mr. Francis) had never heard a case presented so baldly and so destitute of all the facts being told. His friend knew all about the affair, but he chose to tell only a small part. As the case proceeded it developed itself, and the jury were then able to guess why the course taken by the purchaser of the horse had been taken. The mare was glandered, and being so was not a legal tender. He then proceeded to prove that from Christmas last the mare had been suffering from glanders, and that she had been considered "glandered" by the various owners which she had had since that period. She was bought as a glandered mare by a jobber named George Rider, Plymouth, who exchanged a pony which he valued at £5 for the mare and 10*s.*, thus she only cost him about £4 10*s.*

Mr. Carter.—Can all this be evidence?

His Honour.—I think that it is, as it shows that the mare was glandered.

Mr. Francis continued.—Rider kept the mare, giving her plenty of food and very little work, for about two months, and then chopped her for a pony and trap to a man named Thorn, who kept her till he met a "flat" sufficient to give him two horses and some money, as George Lavis said he did give for the old mare. It was very evident that Rider thought that the mare was glandered, as he never allowed her to come in contact with other horses, or to drink at the same watering place where other horses were accustomed to drink. After Thorn had got the money from Lavis he went and told him that the mare was glandered; Lavis's eyes being thus opened, he went to Mr. Dyer, veterinary surgeon, and he treated her, blistering her and giving her powders. Mr. Francis, after contending that his client had acted in a straightforward and business-like manner in refusing to endeavour to palm off a diseased horse upon Mr. Bartlett which he (Mr. Bartlett) would not for £100 allow to come into his stables, and showing from the manner in which the plaintiff had acted throughout that she must have known that the horse was glandered, proceeded to dispute the amount of damages at which the action was laid. Supposing that his client had to pay something, he submitted that it would be only nominal damages. The mare was sold by what he would call a moral fraud for £21 10*s.*; but had it been known that she was glandered, she would not have fetched the £7 10*s.* which she did at Newton. If that was the case, that ground of damages was gone. Next Mr. Carter said, that the legal expenses were to be recovered. He apprehended that His Honour would be with him when he said that the costs of the action in which the plaintiff, Mrs. Lavis, was nonsuited, were not recoverable, as it was plain that she had no *locus standi* in the Court. Mr. Carter brought an action against Mr. Bartlett for the non-fulfilment of a contract when there was no contract in existence, and surely he could not now bring an action against Mr. Hodge to recover the

costs of an action which ought never to have been brought. With respect to the present action, he believed that the conduct of the two witnesses, mother and son, justified him in saying, that they had told downright falsehoods. His ground of defence was this, that the mare being glandered, was not a fit subject for sale.

The Court then adjourned, and on the re-assembling of the jury, the *Foreman* said that they had had no evidence to show any neglect on the part of the defendant.

His Honour then explained, that the defendant had not fixed the conditions of sale to the catalogue, in which he entered the names of the purchasers of the articles sold, and that consequently the catalogue was only a memorandum. The Act of Parliament required that the conditions of sale should be inserted in the catalogue, as well as the name of the highest bidder who became the purchaser.

The Foreman.—We understand that, but we have no evidence of it.

The catalogue was then passed over for inspection.

George Rider, jobber, Plymouth, deposed, that he purchased the black mare about Christmas last, and that he had always treated her as a glandered mare. He got rid of the mare to a man named Thorn.

Mr. Burton, farrier, Paignton, deposed, that he went with Mr. Bartlett in the month of May last to see a black mare, and that about the 19th of the same month he saw the same mare in some stables belonging to Mr. Peter Head. Witness examined the mare carefully, and was of opinion that the mare was glandered. The right nostril was ulcerated, and there was also a thin gummy discharge from the same nostril. Ulcer was one of the signs of glanders. He saw the mare at Mr. Farley's on the 7th of August, and then the ulcer was larger, and the disease more fully developed.

Richard Dyer, a duly-qualified veterinary surgeon, of Torquay, deposed that he attended a black mare, the property of Mrs. Lavis, for the first time on the 23rd of March last. The mare was then brought to his house, and had a swelling of the glands, as also a discharge from both nostrils. Witness gave the young man who brought the mare some powders to be given her in her bran-mash, and ordered a blister to be placed on the glands.

By His Honour.—There were many horses under his care about that time which had the same symptoms as those manifested by the mare in question, and that was the reason why he recommended some medicines, and the glands to be blistered. On the 23rd March he treated her as having a cold; there was an absence of all those symptoms which would lead him to suppose that the mare was glandered.

By Mr. Francis.—Saw the mare again on the 30th March, at Rocombe; saw Robert Lavis there, and spoke to him in reference to the mare; there was a little discharge from the nostril, and the

swelling was less. Witness said, that he would recommend that the mare be put under treatment, as such cases frequently turned out to be serious. He recommended a course of tonic treatment, and left the yard. On the 11th of May the mare was again brought to his house by the same young man, Mr. Bartlett, Mr. Hodge, and Mr. Lavis being present. Witness examined the mare, and found a discharge from the right nostril; there was no ulcer, and an absence of such symptoms as would justify him in saying the mare was suffering from glanders, still he had every reason to believe that she would become glandered unless taken proper care of. His certificate was to the effect that the mare was not fit for sale.

By His Honour.—That certificate accurately represented the opinion which he held respecting the mare at the time. He had Mr. Robert Lavis, Mr. Bartlett, and Mr. Hodge at his dispensary for half an hour, and explained to them the tendency of the disease. There would be no essential difference in the development of the disease, or with respect to its infectious character on the 11th than on the 8th or 9th.

By Mr. Francis.—There were two sorts of glanders, there was the acute and the chronic; he believed that the mare was suffering from the latter form, and as a consequence would be liable to live much longer than if she were suffering from the former. Went with Mr. Bartlett into the country on the 8th of August to see the black mare. Found the submaxillary glands much tumefied, but not in any way adherent to the bone. The right nostril in a state of ulceration, extending from the commencement of mucous membrane upwards as far as he could see. His diagnosis was, chronic glanders. In May the mare was in good condition, but in August she was very poor.

His Honour.—Do you attribute that to the want of sustenance, or to the ravages of disease?

Mr. Dyer.—No doubt the owner considered the animal much diseased, and did not feed her as he would have done one in health. She appeared to have been greatly neglected, and was put in a field of very bare pasturage. On the 13th September she was much worse. Ulceration had then appeared in both nostrils.

Mr. Dyer was cross-examined by Mr. Carter.—When he saw the black mare at the farm on the 30th of March, she appeared better.

Mr. Carter wished to know how it could be said the mare was better, when in fact she was supposed and believed to be in a dangerous state; for his part he could not reconcile it.

(*To be continued.*)

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Sparrow, S., Cambridge
Wallis, Page, Cambridge

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altringham
Lewis, Walter, Crewe
Taylor, John Boardmau, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria
Reynolds, Richard L., Alfreton

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Banister, Albert E., Bridport
Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Dudgeon, David, Sunderland
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Plews, Thomas, Stocton
Thompson, Thomas, Sunderland

Essex.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, Woodford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

Gloucestershire.

Barling, Frederick Wm., Newnham
Hobbs, Henry, Newnham
Paradise, John, Dursley
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

Hampshire.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gates, Robert, Andover
Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

Herefordshire.

Barling, J. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

Hertfordshire.

Proctor, Harrison, Hertford
Rushall, Alfred, Bishop's Stortford
Webb, Thomas G., Bishop's Stortford
Wilson, William, Berkhampstead

Huntingdonshire.

Dickens, Charles, Kimbolton
Fordham, Thomas B., Godmanchester
Garner, Brand, St. Ives
Waters, George, St. Ives

Isle of Wight.

Wheeler, Edwin, Rookley

Kent.

Ashton, John, Sevenoaks
Bentley, William, Margate
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Frederick Richard, Lewisham
Martin, John Bean, Rochester
Morgan, Charles, Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, F. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

Lancashire.

Bridge, Roger, Bury
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, W. I., Worsley, Manchester
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Howell, James, Middleton
Hutchinson, —, Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawson, John, Manchester
Lawson, John, jun., ditto
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Polding, P. Oswald, Bury
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Taylor, Thomas, Manchester
Twist, Charles, Woolton
Welsby, Joseph, Prescot

Leicestershire.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

Lincolnshire.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston

LANCASHIRE (*continued*).

Clarke, Thomas Allen, Horncastle
Cutting, Henry, Market-Raisen
McHugh, John T., Brigg
Santy, Arthur Henry, Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Brown, Geo. T., White Horse Yard, New Cavendish Street
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Hirst, Charles Samuel, Barnet
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H., Harleston.
Carter, Charles N., Swaffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Branford, Wm. Catton, Oundle
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Stephenson, Clement, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Wilson, R. S., Ollaston

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jones, James B., Ludlow
Leigh, Nathaniel, Bristol
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton
Walters, Robert G., Newport

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Gregory, C. N., Bristol
Hutchings, William, Kimpton
Leigh, Nathaniel, Bristol
Stauffer, J., Wedmare

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Checkett, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Harry D., Wolverhamton
Robinson, William, Tamworth

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russell Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes and Lowe, John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough

SUSSEX.

Crofts, Henry, Arundell
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Walker, Alfred, Rugby
Watson, Walter, Rugby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Bibby, James, Calne
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, Robert Tutnall, Bromsgrove
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, John Wilkinson, Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Bourdass, George, Bridlington
Broughton, William, Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, ditto
Cooper, Job, Market Weighton, Brough
Cuthbert, John, Leeds
Dray, Edward C., ditto
Edmundson, W., Hornby
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Secker, Thomas, Ripon
Stephenson, Mrs., Pickering
Thunton, James, Easingwold

WALES.

Bodington, George, Canton, Cardiff
Kennedy, Thomas, Wrexham
White, Thomas, Rhyd-y-Glaves, Carwen.

SCOTLAND.

ABERDEENSHIRE.

Snowball, Matthew C., Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

FORFARSHIRE.

Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso

MISCELLANEA.

PRESENTATION OF A TESTIMONIAL TO MR. R. H. DYER, M.R.C.V.S., TORQUAY.

With pleasure we record the following. In anticipation, it was adverted to in a previous number of the Journal.

On the 4th ultimo Mr. J. M. Downey, of Waterford, was deputed to present Mr. Dyer with an elegant gold watch and chain, which he did in suitable terms. The watch bears the following inscription:

"Presented to
R. H. DYER, Esq., M.R.C.V.S.,
By some Noblemen and Gentlemen in Waterford, as a Mark of their appreciation of his Professional Ability and Courtesy. 1864."

Mr. Dyer acknowledged the present in appropriate language.

CATTLE EPIZOOTICS.

Aldershot; *January 16th*, 1866.

Gentlemen,—Having been for some time engaged in collecting materials for a 'History of Epizootic Diseases,' and finding the task an exceedingly arduous one from lack of references, especially for this century, I would esteem it a great kindness and obligation if any of your numerous readers would lend their aid by forwarding me such records of these maladies as they may possess either in English, or any other language.

When possible, the *ipsissima verba* of the various authors would be preferred. All facts concerning the origin, nature, progress, and termination of each epizootic would be most advantageous, as well as any peculiarity in medical or other treatment. I would, of course, gladly defray any necessary expenses incurred in the transmission of books, manuscripts, &c.

Trusting that the importance of the subject may be sufficiently appreciated in this way, I remain, gentlemen,

Your very obedient servant,

G. Fleming,
3rd Hussars.

To the Editors of the 'Veterinarian.'

FAILURE OF VACCINATION AS A PREVENTIVE OF CATTLE PLAGUE.

We hasten to inform our readers that the experiments, instituted at the Royal Veterinary College by Professors Simonds and Varnell, have proved the inefficacy of vaccination either in preventing or mitigating the cattle plague.

OBITUARY.

We have to record the death of Mr. Joseph Mulliner, M.R.C.V.S., Wrexham. His diploma bears date June 28th, 1843.

Also of Mr. W. N. Proctor, M.R.C.V.S., Bradford, at the early age of 21. His death resulted from a fall from his horse, on January 18th, 1866.

In the monthly military obituary for December we find the name of Mr. W. H. Steel, half-pay.

THE

VETERINARIAN.

VOL. XXXIX. No. 459. MARCH, 1866. Fourth Series. No. 135.

Communications and Cases.

SMALLPOX IN SHEEP (VARIOLA OVINA).

For the first time during some months we vary the title of our first article, albeit we have reason to regret not to be able to suggest that in this case "variety is charming." By this time our readers are doubtless aware of the fact that "smallpox" has appeared among some sheep in Northamptonshire on a farm situated a few miles from Daventry.

The facts of the cases are in many respects peculiar, and for that reason we think it desirable to record them without comment.

On December 24, 1865, the owner of the farm in question bought 76 foreign sheep in the metropolitan market; the lot formed part of a large number consigned to the same salesman, and appeared from their condition to have recently crossed the water; they were also, it was stated, the only sheep at the time in the market that looked unfit for the butcher. The sheep were taken by rail to Northamptonshire and placed on some pasture. Nothing of a very decided character appears to have been noticed up to the end of December, except that some of the animals did not look well. December 30th the flock was moved by road to another part of the country a mile or two distant; at this time one animal was noticed to be ill and unable to walk, it was consequently taken in a cart and placed with the rest. The sheep, on arriving at their new location, were mixed with the owner's flock of English sheep, or at least

were separated from them only by means of hurdles. In a short time some of the foreign sheep became affected with "the blind," and in a fortnight after their arrival the sheep that was moved in a cart died. Between this and January 28, three other sheep died and several were seen to be unwell. Accordingly it seems to have occurred to the owner that further advice was necessary, and Mr. J. H. Reynolds, veterinary surgeon of Daventry, was called in. After making a post-mortem examination of one sheep that died while he was there, and inspecting the sick animals, he came to the conclusion that the disease was "variola." And it is very important to note that he found one animal that gave indications of having recovered from an attack, proving that the affection had been existent among the flock for some time before his attention was called to them, and further showlng how perfectly possible it is for a deadly and contagious malady to be steadily progressing without exciting any suspicion in the minds of non-professional persons.

Soon after the newly purchased sheep were allowed to associate with the others on the farm, the disease appears to have extended to them, and up to February 18th, ten English and nine foreign sheep had died from its effects.

A report of the outbreak was received on February 17th, and immediately one of the officers from the Veterinary Department was instructed to proceed to the locality and report to the government in order that the necessary steps might be taken to isolate the district in the event of the disease proving to be smailpox. An inspection of the flock was made with all possible speed on the following day, and by the next evening the annexed order in Council was published in the "Gazette."

At the Council Chamber, Whitehall, the 19th day of February, 1866. By the Lords of Her Majesty's Most Honorable Privy Council. Present:—Lord President, Sir George Grey, Bart., Mr. Milner Gibson, Mr. Bruce.

WHEREAS by an Act passed in the session of Parliament held in the eleventh and twelfth years of Her Majesty's reign, intituled "An Act to prevent until the first day of September, one thousand eight hundred and fifty and to the end of the then session of Parliament, the spreading of contagious or infectious disorders among Sheep, Cattle, and other Animals" (which Act has since been extended and continued in force until the first day of August, one thousand eight hundred and sixty-five, and to the end of the then next session of Parliament), after reciting that "a contagious or infectious disorder known or described as the Sheep Pox or Variola Ovina, now prevails among the sheep in some parts of the United Kingdom, and it is necessury to take measures to prevent such disorder from spread-

ing," it was and is enacted (amongst other things) as follows, namely:—
"In case any Sheep or Lambs infected with or labouring under the said Disorder, or any Disorder of the like Nature, be exposed or offered for sale, or be brought or attempted to be brought for the Purpose of being so exposed or offered for Sale, in any Market, Fair, or other open or public Place where other animals are commonly exposed for Sale, then and in any such case it shall be lawful for any Clerk or Inspector or other Officer of such Fair or Market, or for any Constable or Policeman, or for any other Person authorized by the Mayor, or by any Two Justices of the Peace having Jurisdiction in the Place, or for any person authorized or appointed by Her Majesty in Council, to seize the same, and to report such Seizure to the Mayor or any Justice of the Peace having Jurisdiction in the Place; and it shall be lawful for such Mayor or Justice either to restore the same, or to cause the same, together with any Pens, Hurdles, Troughs, Litter, Hay, Straw, or other Articles which he may judge likely to have been infected thereby, to be forthwith destroyed or otherwise disposed of in such manner as he shall deem proper, or as may be directed in manner hereinafter provided; and any Person bringing or attempting to bring any Sheep, Lambs, Oxen, Bulls, Cows, Calves, or other horned Cattle, into any such Market, Fair, or open or public Place as aforesaid, knowing such Sheep, Lambs, or Cattle to be infected with or labouring under either of such Disorders as aforesaid, shall, upon Conviction thereof, forfeit and pay for each and every such Offence a Sum not exceeding Twenty Pounds."

And whereas in and by the said Act, it was and is further enacted as follows, that is to say:

"If any Person turn out, keep, or depasture any Sheep or Lambs infected with or labouring under the said disorder, in or upon any Forest, Chase, Wood, Moor, Marsh, Heath, Common, waste Land, open Field, Road Side, or other undivided or uninclosed Land, such person shall, on conviction thereof, forfeit and pay any Sum not exceeding Twenty Pounds."

And whereas in and by the said Act it was and is further enacted (for the more effectually preventing the spreading of contagious or infectious disease) as follows, that is to say:

"It shall be lawful for the Lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time to make such Orders and Regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such Order or Orders, of Sheep, Cattle, Horses, Swine, or other Animals, or of Meat, Skins, Hides, Horns, Hoofs, or other parts of any Animals, or of Hay, Straw, Fodder, or other articles likely to propagate Infection; and also for the purpose of purifying any Yard, Stable, Outhouse, or other place, or any Waggons, Carts, Carriages, or other vehicles; and also for the purpose of directing how any Animals dying in a diseased state, or any Animals, Parts of Animals, or other Things, seized under the Provisions of this Act, are to be disposed of; and also for the Purpose of causing Notices to be given of the Appearance of any Disorder among Sheep, Cattle, or other Animals, and to make any other Orders or Regulations for the purpose of giving effect to the Provisions of this Act, and again to revoke, alter, or vary any such Orders or Regulations; and all Provisions for any of the Purposes aforesaid, in any such Order or Orders contained, shall have the like Force and Effect as if the same had been inserted in this Act; and all Persons offending against the same shall for each and every offence forfeit and pay any Sum not exceeding Twenty Pounds, or such smaller Sum as the Lords or others of Her Majesty's Privy Council may in any Case by such Order direct;"

And whereas a Contagious or Infectious Disorder, known or described

as the Sheep Pox, or Variola Ovina, now prevails among the Sheep, in a certain part of the United Kingdom, and it is expedient to take measures for preventing such disorders from spreading;

Now, therefore, the Lords of Her Majesty's Privy Council, do hereby, in pursuance and exercise of the powers so vested in them as aforesaid, make and ordain the several Orders and Regulations following; that is to say:

I.—It shall not be lawful for any person to remove any Sheep or Lambs to or from the parish of Long Buckby, in the county of Northampton, or to drive or conduct any Sheep or Lambs through or by way of such parish, unless the person so removing, driving, or conducting such Sheep or Lambs shall first have obtained a certificate, in writing, signed by some person who may have been authorized, by two or more Justices of the said county of Northampton to seize Sheep or Lambs infected with or labouring under the said disorder, under the 1st section of the said Act, that such removal, driving, or conducting may take place without danger of spreading the said disease.

II.—All Sheep and Lambs dying in any of the stages of the said disease, wheresoever such death or deaths shall or may occur, shall forthwith be buried by the person or persons in whose possession such Sheep or Lambs may be at the time of death, with their skins on, in pits of not less than five feet in depth, and the carcases so buried shall be covered with quicklime.

III.—All sheds and places whatsoever, and all railway trucks and other vehicles which may or shall have been used or occupied by Sheep or Lambs affected by the said disease, shall forthwith, after having been so used, be thoroughly cleansed with water, and immediately afterwards purified with chloride of lime by the person or persons in possession of such sheds, places, trucks, and vehicles respectively.

IV.—Every person in possession of any Sheep or Lambs in or amongst which the said disease shall manifest itself, shall forthwith give notice, in writing, of the fact to the Chief Constable or Superintendent of Police of the county or borough in which such Sheep or Lambs may be.

V.—And it is further ordered that this Order shall continue in force for three calendar months from and after the date hereof.

(Signed) Arthur Helps.

At the time the Order was published ten sheep were suffering from the disease in a decided form. About thirty had been separated in consequence of the appearance of slight indications of ill health, and the remaining animals were free from any signs of disease. The slow progress of the affection through the flock may be attributed in a great degree to the time of year; and for the same reason it may be that the disease has not passed through the several stages regularly, some animals after nearly three weeks being covered with papulæ not yet showing signs of vesication.

Were it not for the fact that owing to the cattle plague the movement of sheep has been prohibited by order of the local authorities, it is probable that ere this considerable mischief would have been done. As it is, however, there is reason to hope that by the adoption of proper pre-

cautions the affection may be got rid of as quickly as it was last year in Sussex, by the slaughter and burial of all the infected animals as soon as they were discovered, the owner being compensated by the neighbouring farmers for the losses to which he submitted for their protection. If some such plan be not adopted in this instance, it is to be feared that the disease will pass very slowly through the flock, to the great danger of the neighbourhood; a danger which is the more serious at the commencement of the lambing season.

THE PROPOSED NEW VETERINARY MEDICAL BILL.

LEEDS; *Feb.* 10*th*, 1866.

GENTLEMEN,—Will you do us the favour of inserting these few lines in your next publication.

We are unanimously of opinion, and quite coincide with your correspondents, that if the proposed Bill is permitted to pass the House of Commons with the fourth clause in it, as now intended, the profession, instead of being benefitted, will be done a great injury to. The action of the clause will, we believe, be retrogressive, as it will admit indiscriminately blacksmiths and empirics, in this borough alone, numbering between twenty and thirty, and this we hesitate not to say is most objectionable, as well as unjust, to the legitimate veterinary surgeon. If, on the other hand, those gentlemen who possess Scotch diplomas were admitted by this enactment, we do not think any great objection would be offered by the members of the corporate body. We, therefore, take leave to protest strongly against this contemplated injustice, and hope you will, by your powerfnl pen, assist us in our endeavours to prevent its being inflicted on us.

We are, Gentlemen,

Yours respectfully,

EDWD. COLEMAN DRAY, M.R.C.V.S.
JOHN CUTHBERT, M.R.C.V.S.
WM. BROUGHTON, M.R.C.V.S.

To the Editors of 'The Veterinarian.'

THE PROPOSED FOURTH CLAUSE.

DEAR SIRS,—A great deal of discussion has of late been going on in reference to the "Bill" about to be brought into Parliament, and it is to be hoped but few members of the profession are to be found to agree with the fourth clause. It has been conned over and over again by all those who wish "Godspeed" to the members of the body corporate, and I am convinced that, if the objectionable clause be expunged from the Bill (as our friend Gregory has proposed), it will be a source of evil averted alike from the public and the profession; for whatever benefits the profession must of necessity benefit the public at large, either directly or indirectly. I think our friend Gregory has been very happy in his suggestion when proposing to admit practitioners upon *a fee and examination*. Your correspondent "Con" leads us to believe the proposition alluded to not practicable or just. He states, "Now, it should in fairness, I think, be remembered that a great many of the men who are practising without diplomas are thoroughly conversant with those important laws (of health), and who would perceive at a glance the slightest disturbance of them. . . . . They are men, as I have before said, born and bred amongst the very animals they are called upon to treat; not, however, without having first acquired a sufficient amount, for all practical purposes, of anatomical, physiological, and pathological knowledge, as also of chemistry, &c., and who possess much more practical experience than many are aware of, or feel inclined to give them credit for." Now, gentlemen, these are the very class of men much wanted in the country, and Mr. Gregory provides (or wishes to have provided for them) an opportunity of making themselves known, and that *credit* may be given to them for that they deserve. What need they fear, with such an amount of knowledge they possess, of a purely *practical* examination for the diploma? I am of opinion these men ought to be first and foremost in *asking* for an examination.

There is one thing which has not met with the attention it deserves. I allude to the *apprenticeship* system. Make it compulsory for each candidate to produce a copy of indenture of having served *three* years as an articled pupil with a properly qualified man before presenting himself for the *preliminary examination* at the college. This being produced, and then two sessions passed at the college afterwards, would cause to be brought out, as I believe, some first-rate prac-

titioners. I don't think the respectability of the profession will be secured until this has been added to the requirements of the veterinary student.

I am, gentlemen,
Your obedient Servant,
R. H. Dyer, M.R.C.V.S.

To the Editors of 'The Veterinarian.'

Abingdon; *Feb. 8th*, 1866.

Gentlemen,—As a provincial veterinary surgeon I cannot but endorse the opinion of Mr. Gregory in his letter published in the December number of your Journal; and I do hope that no measure so unjust towards the junior members of the profession will be allowed to creep into the "new Bill," as proposed in Clause 4.

In the country, as every one knows, we have all sorts of fellows calling themselves veterinary surgeons; and some have the audacity to style themselves members of the College, although they do not state so on their cards. One, not far from where I practise, tells the farmers he is from Mr. Field's, of Oxford Street; and I have no doubt, from what I have heard, he was employed on that establishment; perhaps, as Mr. Barker suggests, in the capacity of "running doctor" or groom. Another, who has about the same pretensions to the title, had the impudence to tell my father he was *on the committee* at the time I passed my examination.

If there are so many well educated men in the country without diplomas, and possessing, as "Con" asserts, "a sufficient knowledge of anatomy, physiology, pathology, and chemistry," let them be called on to pass a sound, practical examination on the payment of a certain fee; or in the event of their having presented themselves for an examination elsewhere before, no fee at all.

There are, no doubt, a great many men practising who have failed in obtaining their diploma, and for want of the means or opportunity, have not presented themselves a second time for examination, although they may be as fit to practise as many who affix M.R.C.V.S. to their names.

In conclusion, I hope this subject will be freely ventilated, for whilst doing justice to those who are really qualified to keep up the respectability of the profession, do not let us allow the quack and the charlatan to reap the same advantages as those who have devoted their means to the attainment of education to enable them to acquire a certain position.

The importance of this subject must be my excuse for occupying so much of your space.

I have the honour to be, Gentlemen,
Yours obediently,
GEORGE A. DREWE, M.R.C.V.S.

To the Editors of the 'Veterinarian.'

GENTLEMEN,—Should the new Veterinary Act become law it will give the title of veterinary surgeon to about three thousand farriers, who have falsely assumed it, and will place them in this respect on an equality with men who have spent years in study to obtain the title which is now to be so liberally bestowed upon any one who shall be sharp enough to style himself veterinary surgeon before the 1st October, 1866, and be in practice as such on that date. If this be the protection the new Act is to confer on the profession, it is my humble opinion that it would be much better without it.

I think the fourth clause should be entirely struck out of the Bill; and I cannot see that doing so would entail any unmerited hardship upon any one, as farriers would still be enabled to practise as such, but not to assume the title of veterinary surgeon, by which name it is evidently intended, by our present Act, that the public should be enabled to distinguish between the properly qualified practitioner and the farrier.

Your obedient Servant,
W. H.

To the Editors of the 'Veterinarian.'

Feb. 13*th*, 1866.

GENTLEMEN,—I am in practice as a veterinary surgeon, but have no diploma. I am not, however, without a sense of honour, and, therefore, have often felt, and daily feel, the dishonesty—for that is about the word—of my position. My most earnest desire is that I may become legally what I profess to be. Unfortunately, owing to circumstances, it is next to impossible for me to attend the two sessions at college, deemed, I understand, necessary as a preliminary to an examination. Now, on reading over the proposed new Veterinary Medical Bill, quoted in the December number of the *Veterinarian*, my first feeling was one of pleasure to think

that I might continue to use, under the sanction of the college, my self-dubbed title of veterinary surgeon; but my second thought was that that sanction would not constitute me a member of your honorable body. My self-respect is not satisfied with such indulgence. On perusing Mr. Gregory's letter on the fourth clause of the Bill, in the same number, and again that of Mr. Cutting's, in the issue for January, I could not but see the force and truth of their observations. It would *not* be right for the unqualified persons those gentlemen mention to retain the professional cognomen. I also gratefully admit the fairness to all parties of the proposed practical examination to be offered to such persons as have skill enough and a desire to continue in practice. The policy of such a measure is obvious. I for one look upon the offer as a boon. A question, however, arises as to what shall constitute a proper and well-balanced examination. An examination for the purpose entails certain considerations as to satisfactorily meeting the requirements of both sides—wronging neither. It is quite possible that many "skilful and deserving" men are in practice, are as successful in their practice, and are as well received by the public, as many of the "qualified," and yet who are not nearly so well up in the technicalities, or in style, as many of the young college students. Such men in a certain, and in the most important, the practical, sense, are not wanting in knowledge, but they want science—they want system. Again, it must be remembered that the teaching many of those practical vets. have received is purely of an individual nature. In many respects their knowledge, as well as their practice too, is exclusive. One man may have successfully devoted his attentions to the diseases of horses, another to the diseases of cattle, and yet each be comparatively ignorant in the department of the profession the other has chosen. Such exclusive knowledge will hardly be mistaken for ignorance. Of course, applied therapeutics differs as much, or more, between bovines and equines as between equines and *any other* class of animals. It is well known that many—perhaps the majority—of the college members avoid cattle practice, a great number honestly admitting that they know comparatively little or nothing regarding the diseases of the ox tribe. Then, again, gentlemen, the blame of unlicensed practice cannot be laid in all cases upon those so practising. Certainly the fault is not always a wilful one. Perhaps my case is but a type of some others, and, therefore, I may be excused troubling you with it. My father was one of the "old school" of veterinary surgeons, or, as they were gene-

rally but erroneously called, "farriers." He was in active practice about forty years; yet he never had a diploma, nor did he ever seek that honour, but rather appeared to join in the then feeling of the classes, and to have an antipathy to college, and to all its belongings. As regards his skill, almost every one that knew him spoke, and still speaks, in terms of admiration. He had his failing, however; he was too fond of strong drink. Owing to this weakness it is not to be expected but that his family should suffer. Through that my education was not at all of a character to fit me for the profession I was to follow. I certainly got some real practical knowledge; but theory, that indispensable introduction to perfection, was completely ignored. Of course, all things considered, it was no wonder that I imbibed the same prejudices and biassed notions as my teacher, and, consequently, looked upon a college education as a troublesome innovation and an encroachment upon *our* rights. I was in my twenty-second year when my father died, and I then began practice for myself, which is twelve years ago. Early acquired habits and ideas are not easily overcome or put aside. At least so it has proved with me, and it was not until lately that I could look upon the matter of college education, &c., in a proper light. I am now as anxious to see upheld the chartered institution as I was at one time wishful to witness its downfall. With such altered feelings it may be asked why I don't try to pass in the usual way? Simply for these reasons:—First, I have a practice I should not like to lose, as I certainly should were I to attend the prescribed two sessions at college; and, second, I could not support my family during my absence.

Here, gentlemen, allow me to notice the letters in your last from "Con" and "R." In my opinion the suggestions of those correspondents, with respect to the obnoxious fourth clause of the proposed Bill, are far from being satisfactory. I must confute both by a simple statement. I am personally acquainted with two or three "practitioners," each of whom is running his horse and gig, and yet so illiterate as to be unable to spell correctly half a dozen consecutive words. Such, surely, are not worthy of being called members of what really should be one of the learned professions. Moreover, one of those successful dunces has run his gig in one district eleven years; another for nearly twenty, and a third, I am told, for more than twenty years. Truly, brag, and a crafty knowledge of "human natur" does much for quacks and quackery.

As to how the difficulties arising from the proposed form

of the said clause are to be met, must certainly be a controverted question, which, perhaps, will not be easily answered. I, however, make bold to offer an amendment to the said clause; but I do so with some diffidence, and with a full expectation that my proposal may and will be still further improved upon. I have to propose, then, that a first-class certificate of membership shall be given to those in practice at the time of the passing of the Bill *who shall be able to pass a practical examination*; a second class to all, on the payment of an extra fee, who shall prove a certain degree of qualification, based upon scholastic education and social respectability; and that all others be compelled, if continuing to practice, to take some other distinguishing title than that of veterinary surgeon.

Hoping that I have not encroached too much on your valuable time and space, I beg to remain,

Yours very respectfully,

W. W.

To the Editors of 'The Veterinarian.'

By Thos. Greaves, M.R.C.V.S.

Being one of the members of Council who voted for the proposed Bill, I take the liberty of defending that Act, since considerable agitation has sprung up, especially in the Yorkshire, the Lancashire, and the Liverpool Associations, and many opinions have been expressed upon the subject, especially upon the fourth clause. Because the Act does not contain all the provisions which everybody thinks to be desirable, it is characterised as puerile. It is not in contemplation that this Bill shall interfere with those practitioners who are not in possession of the diploma of the Royal College of Veterinary Surgeons, but who call themselves veterinary surgeons already in practice; it would perhaps be a great benefit to the profession and the public at large, if some of them could be put down, but to do it to some and not to others would be invidious and unfair; it would be perpetrating an injustice on some who have followed the calling a great many years, and are useful and respectable men. They are shrewd, plausible, common-sense men, with a good share of impudence, and have a sort of vested interest or vested right; we do not admit them into the profession, or legalise the non-qualified man by this Bill; we simply leave him where he was, viz., outside the pale of the corporate body, we shall not recognise him any more than we do

now, but this we do, we set up a fence on the 1st of next October to stop all new comers, and which fence will prevent all men who have not the diploma of the Royal College of Veterinary Surgeons from commencing practice and assuming the title of veterinary surgeon. Some members ask us to make a more stringent clause, strictly prohibiting any man from calling himself a veterinary surgeon unless he possesses the diploma of the Royal College of Veterinary Surgeons. I am open to confess I do not go so far as this, and if I consent to any alteration in the proposed Bill, it would be because I cannot agree to place the Edinburgh men in the same category with those men who have never been at college at all. These Edinburgh men have studied the same subjects that I have studied; they have passed an ordeal as severe as the one I have passed, and are as competent to practise as I am; many of them are most exemplary men. I hold this as a sufficient test of proficiency. I would rather open the portals wider to them; let the Council alter or amend Bye-law No. 27, and admit every one of these without another examination, upon certain terms, and prohibit all the rest from the privilege of assuming the name or title of veterinary surgeon, however long he may have been in practice. I would not deprive him and his family of the opportunity of gaining a living; let him follow his calling as before, but I would make it compulsory upon him to cease to assume the name and title of veterinary surgeon. These men have, of course, the option of going to any of the colleges and being examined. I would here observe that all such men are treated liberally, and not rigidly, at the examining Board.

The Advantages of the New Bill.

It is admitted on all hands that our present charter is inoperative, that the penalties will not apply, and it is equally evident that an effective charter is desirable. The progress of veterinary science has been not a little interfered with by the antagonism and jealousy between the two principal colleges, their pupils and the Council. It is high time that all this anomaly should cease. What is the lesson which all experience teaches us? It is this, that all divided and antagonistic councils injure the best of causes. There must be one head, one centre from which all authority must proceed, whether it be in the form of a constitutional, a despotic, or a republican form of government. If the council possesses the power which ought to

be legitimately vested in them, all authority would centre in them, and therefore would emanate from them; it would be delegated to them by act of parliament, they could then give effect fully to the wishes of the body of the profession, they could then ensure and command the co-operation and the harmonious working of all the colleges. All earnest and honourable rivalry may be encouraged in these institutions. The council could then carry successfully and put in force the apprenticeship clause, also the preliminary examination at all the Colleges. Thus interposing between the College and the illiterate applicant; they could in future prevent all men, more especially the lowest in society, men who can neither read nor write, men who are a disgrace to any calling, and who bring disgrace upon our name and profession, assuming the name or title of veterinary surgeon. Statistics show that of every three men throughout the country practising as Veterinary Surgeons, two of them are non-qualified men. If this is the state of things now when the charter has been in existence twenty years, it is fair to presume that the same ratio will exist in thirty years hence; is it not high time a line should be drawn somewhere and that a stand should be made? We propose it shall be on the 1st October next; it must then follow inevitably that the race shall become extinct as those non-qualified men die out and their ranks cannot be recruited the result must be in twenty years hence instead of two out of every three being non-qualified, only two out of every six will be non-qualified, and in a few years after them the race will become altogether extinct. It is not a monopoly, it is not a protection act the Council seek. It is legitimacy. They do not want to interfere with the working of any College so long as it complies with the Charter of our land; we would have Professor Dick, the next-elected President of the Council, both he and his college should be respected and venerated as they deserve to be; this course would ensure a noble, a glorious career for our profession, it is beauteously shadowed forth in the horizon of the future. The members of Council are men selected for their good sense and sound judgment, they are an exemplary body of men who have studied this question fairly and dispassionately, and faithfully desire to act for the best interest of the profession, they are willing to listen to the voice of reason, and that voice has been calling loud and long, telling them that they have a duty to perform, and that they are guilty of a dereliction of duty to wink at any man or any body of men setting up a school in opposition to a Government.

Exemptions.

We do not ask to be exempted from serving on juries, we do not ask to be exempted from paying Horse Tax; *this* has given great offence to some, but I must respectfully ask those gentlemen to remember that we applied for these exemptions before, and the consequence was we lost the whole bill. It would be the same again. It is contrary to the spirit of the age in a community like ours. Any man as a citizen of that community should share the duties and obligations of that community. Impressed with these considerations the Council have deemed it advisable not to endanger the success of the bill by hampering it with *these* exemptions.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 33.)

Besides the *White Bryony* (*Bryonia dioica*) described in my last communication, there are several other plants belonging to the natural order *Cucurbitaceæ* possessing interesting features, both as articles of domestic economy, and also as medicinal agents. Amongst the latter may be mentioned the *Citrillus colocynthus* (*Bitter Cucumber, Colocynth*) and the *Ecbalium officinarum* (*Wild* or *Spirting Cucumber*); but as the use of the different preparations of these plants is chiefly confined to human medicine, it will not be necessary to further allude to them. The next plant which will be brought under notice is one of considerable importance, and with which, as a medicinal agent, we are all more or less familiar, viz., the *Digitalis purpurea* (*Purple Foxglove*). Before describing the plant it will be necessary to give a brief outline of the botanical and other characters of the class and order under which it is placed. The *Digitalis purpurea* (*Purple Foxglove*) belongs to the class of *Exogens*, to the subclass *Corolliflorœ*, and to the natural order *Scrophulariaceæ* (*Figworts*), which will be recognised by the following botanical characters—*Scrophulariaceæ* (Figworts): "*Calyx* inferior, persistent, often unequal. *Corolla* monopetalous, usually irregu-

lar; limb flat or erect, nearly equally divided or labiate. *Stamens* in a single series, two or four, and not corresponding in number with the lobes of the corolla. *Ovary* superior, two-celled, many seeded. *Style* simple or rarely bifid. *Fruit* capsular. *Herbaceous* plants or *shrubs*, with extipulate leaves. Very variable in their flowers."—(*Lindley*.)

The name *Scrophulariaceæ* is derived from scrofula, the scurvy, which plants of this order were believed to cure. The prominent characters of the order are its didynamous stamens and capsular fruit. Different species inhabit various parts of the world, but are found most abundant in temperate climates. "Four species grow wild in Great Britain; between forty and fifty more have been introduced from foreign countries, and eight or ten more are known. Two of the introduced species are evergreen undershrubs; and most of the others are hardy perennial-rooted herbs." Several plants belonging to the order are cultivated for their floral beauty, such as the *Raistemous*, the *Antirrhinums*, the *Calceolarias*, the *Louseworts*, the *Mimali*, the *Collinsias*, and the *Veronicas*, &c. A few have agreeable odours and taste; but the great majority are malodorous, bitterish, acrid, and generally disagreeable. Some plants of the order possess medicinal properties, and amongst these is one which is extensively used in veterinary medicine, and with which we are all more or less familiar, viz., the *Digitalis purpurea* (*Purple Foxglove*). As a lengthened description of this important agent will be required, its consideration will form the subject of my next communication.

(*To be continued.*)

THE EMPLOYMENT OF SPROUTED GRAIN FOR FEEDING PURPOSES.

By J. Seaman, M.R.C.V.S., Priory, S. Walden.

Sirs,—Herewith I enclose you copy of a letter which I have had the honour to receive from the Chancellor of the Exchequer, in answer to my letter, a copy of which you were good enough to insert in the *Veterinarian* of last month. I have also enclosed you a copy of second letter to the Chancellor, with other remarks, which perhaps you will do me the favour to insert in the next number of your Journal.

Yours obediently,

Isaac Seaman.

(COPY).

11, Downing Street, Whitehall;
January 10*th*, 1866.

Sir,—I am directed by the Chancellor of the Exchequer to acknowledge the receipt of your letter of the 6th inst., and am to state that he has no reason to believe that the rules in force, which depend on an Act of Parliament, unduly restrict the use of malt as food for cattle

I am, Sir,

Your obedient Servant,

(Signed) W. B. Gurdon.

To Isaac Seaman, Esq.

(*Copy of Second Letter to the* Right Hon. W. E. Gladstone, M.P., *Chancellor of the Exchequer*.)

Sir,—I have the honour to thank you for your courteous reply to my letter of the 6th January.

If the Act of Parliament to which you refer was made for the express purpose of removing restrictions from the manufacture of cattle malt, the working of it unfortunately shows directly opposite results, the letter of Mr. Turner, Stoke Ferry, Norfolk, of Nov. 23, 1864, showing the restrictions of the Act may not be forgotten by you.

Malt, as the B. I. R. directs it to be made, is next to useless for feeding sheep. Sheep are fed in open fields, and exposed to all kinds of weather. The revenue malt is almost an impalpable powder, which the slightest wind blows out of the troughs and into the eyes of the sheep. Rain washes away the sugar, and makes paste of the glutinous and other constituents of the malt, a form of food which it is not the nature of sheep to eat, nor will they eat it. This malt cannot be purchased under £13 per ton; and it is really doubtful whether any of it can be purchased at that price, for most of the maltings which were opened for the manufacture of the malt are now closed; "first, because of excise restrictions; second, because when made could not be sold; the farmer finding it practically a useless article for feeding sheep (for reasons before named), and giving no equivalent return when used for feeding oxen.

Raw barley is now worth only £8 per ton, and to semi-malt a ton of the grain costs ten shillings. A farm shed and common farm labourer suffices for the manufacture of it. No drying is required.

The raw grain being already upon the farm, there is no expense of cartage. The Board of Excise calls this preparation malt, and which they have informed me can legally be made only by a licensed maltster." This, sir, literally means that the farmer must not prepare cattle-food upon his own premises, from the produce of his own farm, in his own way, but is bound by Act of Parliament to cart the raw grain to a licensed malt-house, there to be spoiled, then to cart it back, and is asked to pay £13, or 62½ per cent. more for the spoiled than for the article which he can manufacture upon his own premises, and which, when manufactured, is the most wholesome cattle-food, and quickest of all mutton and beef producers; is suitable for all kinds of herbivorous animals, may be used for feeding in sheds, yards, or open fields, and during all kinds of weather. A ton of barley, semi-malted, with the addition of green rape or turnips, will produce 600 lbs. of mutton, which, at 8*d.*, amounts to £20; deducting from this sum £6 for attendance upon the sheep, preparation of the grain, and value of green food, shows 75 per cent. balance, the sum of restriction which the Act of Parliament to which you have alluded imposes upon the manufacture of a wholesome and great meat-producing article, or, otherwise expressed,—

600 lbs. of mutton the produce of one ton of saccharized grain.				Raw grain . . .	£8	0	0
				Shepherd's attendance and other expenses .	6	0	0
				Balance . .	6	0	0
	£20	0	0		£20	0	0

75 per cent. restriction upon the manufacture of wholesome cattle-food, and this not to add one shilling to the public exchequer! Nor does the evil rest here, for every ton of barley or wheat which the farmer is prohibited to malt for cattle-food the public are deprived of 600 lbs. of meat; and multiply the tons which would be used were the restriction removed by the 600 lbs., the additional supply of mutton and beef would be enormous.

The Chancellor of the Exchequer does not appear to know that the farmer is restricted in the use of the produce of his own farm for feeding horses, sheep, and oxen; and it is not very likely that the one-sided experiments of the Board of Trade would rightly inform him upon the subject.

Mr. Gladstone has doubtlessly formed his opinion upon the assumption that the experiments of the Honorable Board were fairly and honorably conducted; but, sir, when the

farmer is told that saccharized or malted grain is not superior to the raw grain from which it is produced, when he well knows that raw barley and raw wheat are deadly poisons, and that in a saccharized state they are the most wholesome foods for horses, sheep, oxen, and pigs, and the quickest of all fat-forming materials.

That horses affected with a skin disease which resists all known medicinal agents, and those debilitated by fevers, are quickly restored to health by a saccharized grain diet.

That ewes fed upon saccharized wheat and straw chaff, without a single root or any other green food, maintained in health, and produced lambs, which at eleven to thirteen weeks old, were worth from 42*s*. to 44*s*. each; that lambs taken from the ewe, and affected with diarrhœa, are quickly restored to health with saccharized food; that ewes reduced in condition, and yielding lambs diseased at birth, both ewe and lamb were restored to health in three weeks with saccharized barley.*

That when twenty-five bullocks, costing £14 each on the 2nd of October, 1864, pastured during the day, had half a peck of saccharized barley with straw chaff at night for the first month, half a bushel of turnips and one peck of the barley, with hay and straw chaff up to the 14th January, 1865, last month ending 14th of February, 1865, six pounds of linseed cake in addition, on that day sold for £24 15*s*. The profit did not rest here, for owing to peculiar mechanism of the stomachs of the oxen, about one-fifth of the grain was evacuated with the excrement of the cattle, upon which forty pigs were fed, and increased in value 25*s*. per head.†

Experimentor, Mr. Collier, Henham, Essex.

With these facts the farmer has a just right to doubt the integrity of those gentlemen who conducted the malt-feeding experiments of the Board of Trade, and to believe that there was a conspiracy to serve a political purpose, or ignorance at work to shove out reason and common sense.

Yours obediently,

ISAAC SEAMAN.

* See May *Veterinarian*, 1865, p. 300. Professor Simonds was consulted as to the condition of the flock last alluded to. It was the opinion of the Professor that the disease was scrofula, and doubtlessly it was so. And how should it be otherwise, for there was not sufficient of the albuminous constituents in the food of the ewe to build up the nitrogenous structures of the body of the lamb.

† I have since invented a machine for crushing the grain after it is sprouted. None of the nutritive constituents of the grain so prepared will then be evacuated.

Facts and Observations.

Massacre of Small Birds in France.—At a recent agricultural meeting in France the Archbishop of Bordeaux (Cardinal Donnet) gave some statistical details in order to show the injury done to the agriculturist by the wholesale massacre of small birds:—"It was formerly calculated that in spring time there were not less than 10,000 birds' nests in each square league. Now we know that every nest contains on an average four young ones. Well, then, it has been shown that each of these little ones requires for its daily consumption 15 worms, and that the parents require for their share 60, making a total of 120 insects for the daily consumption of each nest. If you multiply 120 worms by 10,000 nests, you have a total of 1,200,000 worms destroyed every day, or 36,000,000 in a month. Thirty-six million worms! Have you reflected that those 36,000,000 worms, if you do not respect the existence of those poor birds that consume them, will in their turn eat up the leaves, the flowers, and the fruits of our trees as well as the produce of our kitchen gardens? Neither should we forget that the insects and the parasite plants of which these birds would rid us levy an impost nearly double the property tax. Bear in mind that during the present year the caterpillars have done such damage to the cabbages that this vegetable has disappeared from our tables, and that these insects have been equally injurious in the pine woods."

Persons Bitten by Dogs.—On the 26th of June, the late House of Commons ordered a return of all persons who had been bitten by dogs and conveyed to hospitals since the 1st of January last within the limits of the metropolis. The return has just been printed, and shows the following results:—Charing Cross Hospital, 56; German, 9; Guy's, 40, one of whom died from hydrophobia; London, 70; Middlesex, 32; Royal Free Hospital, Gray's Inn Road, 13; St. Bartholomew's, 61; St. George's, 28; St. Thomas's, 26; Seamen's, 1; Westminster, 24. Total in the seven months, 360. The following case of hydrophobia, arising from a dog licking his master's face, was admitted into St. Thomas's Hospital, and terminated fatally:—Henry James Rayner, aged forty-two, living in the Wandsworth Road, was admitted as in-patient on the 23rd, and died on the 24th of May, of hydrophobia. The deceased stated that he had not been bitten, but that his dog was in the habit of licking him.

Reproduction of Bone.—We have several times had occasion to mention the remarkable experiments instituted by Dr. Ollier, of Lyons, with a view to test the action of the periosteum (membrane enveloping the bone) in the reproduction of osseous matter (says *Galignani*). The fact itself is now beyond all doubt; but although opportunities have presented themselves of repeating, on a small scale, on the human species the experiments made on animals, there are scarcely any cases on record of a successful reproduction of the larger bones of the human frame. A remarkable case of this kind was, however, brought by Dr. Ollier under the notice of the Academy of Sciences, at a late sitting of that body. The patient was a girl of sixteen, who, being of a weak constitution, had for the last eight years been complaining of pain in the region of the shoulder. When admitted into the hospital at Lyons the scapulo-humeral joint was open, and a great deal of suppuration was in progress. A length of bone of twelve centimetres was cut out in a living state, the periosteum being preserved. In the course of seven months a new bone has been formed, shorter than the old bone by a centimetre and a half. The patient can dress herself alone, raise her hand to her head, and perform other evolutions with nearly the same ease as with the other arm, and she is daily improving.

Waste of sulphur in Smelting of Copper.—Mr. Spence asserts that the amount of sulphur wasted in the smelting of copper is enormous, amounting to not less than 70,000 tons per annum, which, at the present price of sulphur, would be worth £455,000. He has invented furnaces by means of which all the sulphur so eliminated may be passed into the vitriol chambers as sulphurous acid gas.

Difference in temperature in the Arterial and Venous Blood.—M. Collier has, by experiment, ascertained that these two bloods have never one and the same temperature, even in arteries and veins which are in close proximity to each other, the arterial blood being always warmer than the venous. The blood of the carotid artery, he says, is from half a degree to two degrees warmer than the blood of the jugular vein, and a similar difference is found in the blood of the femoral artery and the saphena vein. M. Collier further states that the temperature of arterial blood slowly decreases from the aortic trunk towards the capillaries, while the heat of venous blood increases as it makes its way to the central organ. Every large vessel appears to

possess its proper temperature. The superior vena cava presents the minimum, the portal vein the maximum, while the inferior cava has an intermediate degree. In general, the blood on the two sides of the heart was found to show but small difference of temperature. From arterial blood being thus hotter than venous, the author draws the conclusion that the blood becomes heated as it traverses the pulmonary tissue, and if, after parting with caloric, to heat the air in the bronchi, as well as to evaporise the products of transpiration, it still, notwithstanding these two cooling processes, is warmer when it issues from, than when it enters the lung, it must be because heat was disengaged by the action of the air.

Common Source or Origin of the Imponderables. —Dr. F. C. Calvert expresses his belief that the universally diffused fluid in the universe called ether is susceptible of being set in vibration by certain influences, as, for instance, those generated by the sun, and thus are produced heat, light, and chemical rays. Moreover, as there is no chemical action without a corresponding production of electricity, it follows that electricity, as well as magnetism, may be considered as a mere modification in the vibrations of the same fluid. It may not be that this fluid is really converted into those diverse fluids by special modifications of its own vibrations, but that they only become manifest to our senses when it has imparted its own or special vibrations to the particles of matter; and that it is the peculiar vibration which it imparts to the molecules of matter that develops in the molecules themselves such a mode of vibration as gives birth to what we call heat, light, electricity, and magnetism. This fluid, ether, also represents the force called gravitation, is in a constant state of activity throughout the universe, and brings about that goodly and admirable harmony that pervades it subsequently. Mr. Calvert asserts his conviction to be that this ether is convertible into these imponderable fluids.

THE VETERINARIAN, MARCH 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

ON CO-OPERATION.

It cannot, we are sure, have escaped the observation of our readers that we are warm advocates for co-operation, believing that from it much enduring good is to be obtained, while, at the same time, it tends to lighten labour and to lessen individual responsibility by diffusing it. The members of a profession, nevertheless, should ever support one another, and each so act as if on him alone depended the well-being and well-doing of the entire body.

"Fellow-worker, toiling brother,
Come into the fields with me:
See! the sheaves support each other,
So with us it ought to be.

Lean upon me in your trouble,
And support me with your joy;
Friendship can a life time double,
Hatred will two lives destroy."

We denounce with soul-loathing any assumption of presumed superiority, and equally do we detest a domineering spirit and a love of dictation. It is foreign to us. Yet as there ever must be grades in society, and some are called upon to perform duties that do not devolve upon others, and for which they are both fitted and destined; so we think each can afford to give to the other assistance, and thus mutual good will be the result. We have before expressed a wish that the building of the Temple of Science might be carried on like that of the Temple of old. And as in *it*, so now, some persons must be content to be "hewers of wood and carriers of water;" but these can no more be done without than the carvers of the cedar-wood and the cunning workers in gold, fine linen, and purple. For ourselves, permitted and called upon to labour, we have done

so cheerfully, because we have been hitherto so kindly supported by our friends. Ours was no sought-for or self-imposed task, but circumstances over which we had no controul placed the Journal in our hands, and we have conducted it to the best of our abilities; and judging from the position it now takes our labour has not been in vain.

Man is something more than a mere animal; he is a moral and a social being, capable of realising a fellow-feeling with those around him, entering into a bond of brotherhood with them, and practising all the amenities that sweeten life, and, thus acting, he fulfils one, at least, of the ends of his existence here. But he has a higher life than this, namely, the intellectual, in which he manifests a taste for literature, the sciences, and the arts. And even beyond this there is a higher life still—perhaps the highest, namely, the spiritual—but with that we have not to do. It is in proportion as man's intellectual powers are cultivated that he becomes elevated in the social scale, and by the diffusion of the knowledge he has acquired he raises those with whom he is associated. In every sense, then, it becomes desirable that man should not be selfish.

It has been stated that every living organism has a two-fold function or ministry; it has one which conceives mainly its own inner life, the strengthening and upbuilding of its own frame; but it has likewise a ministry which concerns the living forms around it. A plant, for example, absorbs nutriment that it may live, and gives out or yields itself up, that others also may live. In like manner act the lower animals; and perhaps man, intellectually and morally, may be said to do the same.

Truly has it been stated that if man casts a retrospect over his past life—and however incessantly its concerns may have pressed, and however busily he may have devoted himself to them—he will find himself but one of the multitude, who, if occupied with earthly pursuits alone, have to exclaim *Omnia vanitas!* The precious time has been wasted—the world's works and plans must be broken off unfinished—for each thinks that on himself hangs the accomplishment of mighty deeds which he was destined to

achieve. Alas, how puerile! Excepting, perhaps, the one in a thousand productions of sterling value for future ages, the most popular successes last but for a generation at the most; and yet man liveth not for himself alone. He is a centre whence emanates good or evil to many others, and his influence often extends further, perhaps, than he is aware or at all conscious of—like the pebble thrown into a deep and placid lake, the concentric circles produced by it extend to the utmost limit of its boundaries. How important, then, that each should endeavour to fulfil the duties of his allotted sphere, since "the human mind ne'er knows a state of rest." It is always progressing, and as the inclination is given to it so will the result be either for weal or woe.

The poet has truly said "Change is our portion here." Nothing is constant, and in the eternal flux of ages even the materials of the sun and planets may become re-arranged. Perhaps, indeed, our entire solar system has no independent existence, but only forms a part of a boundless whole, every portion of which, being governed by fixed and determined laws, is undergoing incessant and harmonious changes. Such a view does away at once with new creations and annihilation; since by the exertion of this conservative force all the matter formed at the "beginning" still exists. "Waves may change to ripples, and ripples to waves; magnitude may be substituted for number, also number for magnitude; asteroids may aggregate to suns, suns may resolve themselves into floræ and faunæ, and floræ and faunæ melt in air—the flux of power is eternally the same. It rolls in music through the ages, and all terrestrial energy. The manifestations of life, as well as the display of phenomena, are but the modulations of its rhythm." Yet amidst this war of elements and seeming wreck of worlds man ever lives, either mortal or immortal, and lives, as we have said, not for himself alone, but also for others.

But co-operation, to be effective, calls for not only an identity of interests, but also a reciprocity of kindly feeling, without which it degenerates into the selfishness of the churl. Of the advantages resulting from co-operation

surely no greater proof can be adduced or desired than the formation of the several provincial medical associations, reports of the proceedings of which we gladly give a place to in our Journal. They excite an honorable and a healthy spirit of rivalry among the members of our profession; they advance its best interests; veterinary science is by intercommunication promoted; and each to the other imparts intellectual strength by mind-contests, being roused by a laudable desire, not so much to excel as to impart knowledge—knowledge that has been acquired in the best of all schools—that of experience.

On yet another ground may co-operation be advocated. Disease is hydra-headed, and demands an herculean mental power to combat it, as well as a recourse to many stratagems which science dictates to prevent its recurrence. On this account it is that the medical practitioner, human or veterinary, must be conversant with all those decisions of science that bear on medicine and become its aids, *e. g.* the laws of hygiène, therapeutics, and physics, as well as anatomy, physiology, and pathology.

We have before expressed our wish to be able to secure the welfare of each in the advantage of all, and we believe much more might be accomplished than is were there a greater willingness on the part of the many to "give and take." "There is that which scattereth, and yet increaseth." We have ever held that the communication of information leads to a corresponding return. Exclusiveness is a proof of narrowness of mind, and yields little, if any, fruit. Nevertheless, amid all our dissension and petty jealousies, we believe an undercurrent runs, indicative of good to the body generally, for whenever there is a need for it, activity and united force are aroused. May we be permitted to appropriate a figurative wish, otherwise applied by one of the greatest orators of the day, namely, that all the members of the profession, "though many as the waves, may be all one as the sea."

United we stand, divided we fall.

Extracts from British and Foreign Journals.

THE CATTLE DISEASE OF 1714.

(*Continued from* p. 112.)

In continuation of the records of the cattle murrain of 1714, we come next to the account as given by RICHARD BRADLEY, F.R.S. in his pamphlet, entitled—

'THE PLAGUE AT MARSEILLES CONSIDERED: with Remarks upon the Plague in General,' shewing its cause and nature of the infection, &c.: 3rd edition, 1721.

"I cannot help taking notice likewise of the raging Distemper which was among the Cows about *London, Anno* 1714. It was so Violent and Infectious, that if *one* had it, all others that came within Scent of her, or even eat where she Grazed, were surely infected; it seized their Heads, and was attended with running at the Nose, and a very nauseous Breath, which killed them in three or four Days. The Herdsmen would not allow it to be the *Murrain*, nor could give any Account from whence it did proceed, or could find out any Remedy against it; they only tell us the unusual dry Summer, and the continued *East*-Winds, were the occasion of it. This Distemper had been for two or three Years before it came to us, in *Lombardy*, *Holland*, and *Hambrough*, to the Loss almost of all their Cattle. The States of *Holland* caused a Medicine to be published for the Good of those who had their Cattle thus Distemper'd; but having been try'd here, 'twould not Cure one in seven, but rather increased the Infection by keeping the distemper'd Cattle longer alive (by some Days) than they would have been without it. 'Tis remarkable, that no Oxen had this Distemper, but only *Milch-Cows*, which were more tender than the *Males*. The Herdsmen to keep their Cattle from the Infection, let them Blood in the Tail, and rubb'd their Noses and Chaps with *Tar;* and when any happened to die of it, they were burnt, and buried deep under Ground. It began at *Islington*, spreading itself over many Places in *Middlesex* and in *Essex*, but did not reach so far *Westward* from *London* as twenty Miles.

"The most general Opinion concerning the Cause of this Distemper, was, that the Cattle were first infected by drink-

ing some unwholesome standing Water, where 'tis probable some Poisonous Insects were lodged and bred; the summer having been extreamly dry, attended almost constantly with *Easterly* Winds, the Grass almost burnt up, and the Herbs of the Gardens destroyed by Insects; but such as they were, (unfit for Table Use) were given to the Cattle. There was likewise so great want of Water, that many were forced to drive their Cows five or six Miles to it.

"The Electuary publish'd upon this Occasion by the States of *Holland*, was compos'd of most, if not all the Drugs used in the most serviceable Medicines that were made use of against the Plague among Men; most of which Ingredients we know to be mortal to Insects, as strong scented Roots and Herbs; but above all, Aromatick Gums and Saps of Plants; as Rhue, Garlick, Pitch, Tar, Frankincense and Olibanum. These Ingredients are much used in *France* and *Italy* to prevent or destroy Infection, by burning them and smoaking such Bodies, Letters, or any other things as are brought from infected Places, after they have made *Quarantain*, and are not suffered to come on Shore 'till they have undergone this Operation.

"It is not against Experience, that Insects can live and encrease in Animal Bodies: How often do we find Men, Women, and Children troubled with Worms? What Varieties of those Insects are often voided by them? And how should that be, if they were not either suck'd into the Stomach with the Breath, or taken into it with some unwholesome Food? For they cannot breed in such Bodies from nothing, without either their Eggs or themselves are brought thither by some Accident: For if they were the natural Produce of Animal Bodies, they would then be alike common to all, which we know they are not.

"I have been informed, that in the Year 1714, when this Mortality among the Cows was at its height, that towards the End of the Summer, some Farmers brought in Fresh Cattel, and turning them into the same Fields, where many Cows had died before, they took the Infection and died likewise; but the following Spring those Fields were void of Infection, and the *Cows* that were put into them did very well, but what were then put into the *Cow-Houses*, where the sick *Cows* had been the Year before, were seiz'd with the Distemper, and died; which seems to inform us that it was the Effect of *Insects*, which thro' the Warmth of those Stalls were preserv'd from the Severity of the Winter's Frost; but such as were left in the open Fields were destroy'd by the Cold. I have heard that a Woman about *Camberwell* cured Six in

Seven of her *Cows*, by giving them once a Week an In fu sion of *Rhue* and *Ale-wort*."

Our next author is Dr. Theophilus Lobb, who, in his 'LETTERS RELATING TO THE PLAGUE AND CONTAGIOUS DISTEMPERS,' 1745, says in Letter 8—

Containing, first, An Enquiry into the Nature, or Quality of the Cause, by which the contagious Distemper is produced. 2. Rules for Management, with proper Remedies for Cattle taken sick of such a Disease. 3. Advices for the Management of the well Cattle, to preserve them from the Effects of Infection.

To JOHN MILNER, *Esq., one of his* MAJESTY'S JUSTICES *of the* Peace *for the County of* Middlesex, *and first* COMMISSIONER *appointed to make proper Examinations,* &c. *when the* contagious DISEASE *raged among the* MILCH-COWS, *near LONDON, in* 1714.

SIR,

§. 930. THE contagious Distemper, which has for some Time been among the larger CATTLE in foreign Countries, and which, as I have been informed, appears now among that Sort of Cattle in *Essex*, in *Scotland*, and in *Ireland*, is a Subject not unworthy the Consideration of PHYSICIANS, who, on the Account of their peculiar Studies, and Knowledge of the Structure and Oeconomy of animal Bodies, and of the Nature of Medicines, are most capable to find out the Cause of such a Disease, and to contrive Remedies which, with the divine Blessing, may cure it. The great HIPPOCRATES studied the *Diseases* of Beasts, as well as of Men, and Remedies against them; as appears from that Part of his Works called ΙΠΠΙΑΤΡΙΚΑ: And thereby he set an Example worthy of Imitation.

§. 931. AND, if any Man shall be directed, and succeeded in such Researches, by Him, who only can give Knowledge and Wisdom, it will be a very important and extensive Service; as it may be an effectual Means of keeping much Cattle alive in a sickly Season, a Lessening the Losses of Farmers, and of Preventing many other calamitous Consequences of an increasing Contagion.

§. 932. A very ardent Desire of being useful to the PUBLIC prevailed with me to spend some late Hours in Study, to discover the *Quality* of the Cause that produced the contagious Disease, (which was among our Cattle in 1714, and, probably, that Distemper also, which has brought

a vast Loss of Cattle in neighbouring Countries, and wherewith we seem to be threatened;) and to find out a proper Management, and suitable Remedies.

§. 933. And, from an Apprehension, that it may prove of some Advantage to the Public, I shall communicate my Sentiments on these Things.

§. 934. Brute Creatures cannot describe their Sensations; and therefore we can never know all the Symptoms of their Distempers; and, consequently, have less to guide us in our Enquiries about the Origin of their Sicknesses, than of the Diseases in Men; but yet, by a careful and due Examination, I imagine, we may obtain the Knowledge we are seeking after.

§. 935. We should consider what Kinds of Causes can destroy the Health of animal Bodies, and bring on Sickness and Death.

§. 936. And, that we may form a right Notion of the Cause, of the contagious Distemper, I would premise the following Observations, *viz.*

§. 937. *Observ.* 1. That, while the Blood in *Cattle* retains its healthful Consistence; while it is neither too thick, nor too thin; while the muscular Fibres, and animal Vessels, are neither too lax, nor too tense; and while the vital Strength, or the Force of the Action of the vital Organs remains undiminished, there cannot be much Sickness, at least there can be no Death: But, so long as these Particulars continue nearly in their natural State, so long will the Respiration of the Animal be performed, the Circulation of its Blood carried on, and its Life continued.

§. 938. *Observ.* 2. That, immediately before the Death of the animal Body, there precedes a Cessation of its Respiration, and of the Circulation of its Blood.

§. 939. *Obser.* 3. That the most frequent Causes which put a Period to the Circulation of the Blood, and the Respiration of the Animal, are the following, *viz.*

§. 940. *Cause* 1. That *Inspissation*, or Thickening of the Blood, which renders it unpassable through the Extremities of the capillary sanguine Arteries into the capillary sanguine Veins: And it is easy to apprehend how such a Thickness of the Blood stops the Circulation, and brings on Death.

§. 941. And I may observe, that a certain Excess or Degree of Heat can in a few Minutes so much inspissate the Blood, as to render it unpassable from the Arteries into the Veins; as appears from some Experiments made by the learned Dr. Boerhaave.*

* *Vid. Boerhaave Chemiæ*, vol. 1. p. 236, 237. And in vol. 2. p. 307. he

§. 942. INTENSE Cold, and coagulating Poisons may also produce the like effect.

§. 943. *Cause* 2. THAT *Constriction* of the muscular Fibres, and animal Vessels, which is inconsistent with their natural, vibrating Motion, will immediately stop the Respiration in an animal Body, and the Circulation of its Blood, and put an End to Life.

§. 944. THUS it is, when Persons die suffocated with the Fumes of burning *Brimstone* or *Charcoal;* or with the *Effluvia* of any other Substance that has a like strong constringing Quality.

§. 945. WHILE Life continues, there is an alternate Contraction, and Dilatation, or Distention of the animal Vessels; or, a reciprocal Action, and Reaction: And that which constringes the Vessels so much as to put a Stop to these Motions, does at the same Time put a Period to Life.

§. 946. *Cause* 3. THAT general *Relaxation* of the muscular Fibres of the Heart, and Arteries, which renders them incapable of their natural contractile Motion, will make the Respiration of the Animal to cease, and put a Period to the Circulation of the Blood.

§. 947. AND this (§. 946) indeed is a frequent, and immediate Cause of Death, both in Men, and Beasts.

§. 948. THE Blood may be too thin; and it is abundantly so in *hydroprical* Bodies: Yet, while the muscular Fibres, and animal Vessels retain their contractile Force; while there remains Strength in the vital Organs to perform their Functions, so long will the Circulation of the Blood be carried on, and Life remain.

§. 949. THIS general *Relaxation* (§. 946) of the Fibres, and of the Vessels composed of them, may be effected by any PARTICLES of Matter diffused in the Blood, which have a very strong *dissolvent Quality*.

§. 950. FOR such Particles of Matter (§. 949) may destroy the Consistence of the animal Fluids; and, by dividing and sub-dividing their Globules, reduce them to that *Minuteness*, which will occasion Hæmorrhagies, or colliquative Stools, or Urines, or Sweats; and may so far diminish, and weaken the Cohesion of the component Parts of the muscular Fibres, that *no contractile* Power shall remain in the animal Vessels; which is the case even among Men in the Progress of putrid Fevers, attended with a feeble, languid Pulse, a Diminution

says, *Hinc constat igne certi gradus, nec multo majoris centum graduum, humores nostros omnes, simul unitos cogi in Massas, per vasa immeabiles, concretas.*

of the vital Heat, Languor, Hæmorrhagies, and colliquative Evacuations.

§. 951. It is a Matter of vast Importance to know whether a contagious Distemper among Men, and Cattle, is produced by a Cause, that has a *dissolvent* and *putrefying* Quality. And that it has such a Quality, I think, will be manifest from divers Considerations. *Vid.* §. 956, *infra.*

§. 952. *Observ.* 4. That, when the Sickness and Death of Cattle are not *synchronous*, or very nearly at the same Time, we may make the following Conclusions, *viz.*

§. 953. *Coroll.* 1. That the Sickness and Mortality among them is not produced by any *poisonous*, *coagulating* Particles of Matter diffused in the Air, and received with their Breath into their Bodies, and *inspissating* the animal Fluids, and occasioning Death in the Manner described §. 940. For, if such a Cause was existing in the Air, it must act on all animal Bodies that at the same Time had their Respiration in it: Tho', on the Account of different Temperaments of Bodies, the mortal Effect might be accomplished in a little less time in some bodies than in others.

§. 954. *Corol.* 2. That the Sickness, and Death of the Cattle, is not effected by any Particles of Matter of a *strong*, *constringing* Force, like the Fumes of *Sulphur*, diffused in the Air, and occasioning Death in the Manner related in § 943. For, if such a Cause exists in the Air, all animal Bodies, even of different Species, that breathe in it, must at the same Time be affected by it; as they would be, if confined together in a Room, the Air of which was replete with the Fumes of *Charcoal*, or *Brimstone*. Some of the Bodies might survive others, but that only could be for a few Minutes: Their Death would very nearly be at the same Time.

§. 955. *Corol.* 3. That the Sickness, and Death of the Cattle, is not occasioned by any *poisonous*, destructive Quality of the *Food* they eat, or the *Water* they drink: For, if such a Quality was in their *Aliment* strong enough to produce Sickness and Death, it would make the Sickness of all the Cattle that live upon it to be very nearly at the same Time. As if a Company of People feed on Broth, in which some poisonous Herb has been boiled, the morbid Effects appear nearly at the same Time.

§. 956. *Corol.* 4. When the Sickness, and Death of the Cattle are not at the same Time, but happen successively; when there is Evidence, that the Distemper, in various Instances, is propagated by Infection, we may conclude, 1. That the Cause which produced it in the first Beast, which had it, was of a *dissolvent, putrefying Nature,* and terminates

in Death, as related §. 946, 947. 2. That the *dissolvent Particles* (however they came into the Body of the first sick Beast) like the *variolous* Humour in Persons, who have the *Small-Pox;* and like the pestilential *Infection* in People, who have the *Plague, assimilates*, or *transmutes* Part of the animal Fluids into their own Kind; which is a Generation, and Multiplication of *infectious Particles*, some of which, emitted from the Body of the first sick Beast, is conveyed by Contact, or somehow, thro' the Air, into the Bodies of the Cattle infected by it, and so on.

§. 957. And indeed, if there was no Communication of *Infection* from the sick Cattle to the well, the Distemper could not justly be called *contagious;* and there would be no Advantage by separating the Well from the Sick; but Experience has abundantly proved the contrary.

§. 958. That the contagious Distemper, or *Murrain*, which has been among Cattle, is produced by a Cause that is of a *dissolvent, putrefying* Nature, appears not only from what has been observed in the foregoing Sections, (939, to 957) but also from the Effects of that Cause observed in the sick Beasts while living, (during the Time of the Contagion among the Cattle at *Islington*, &c. in the Year 1714) and which appeared after Death on Dissecting their Bodies

§. 959. There occurred in the Time of their Sickness three Symptoms, which discovered, that the morbid Cause had a *dissolvent* Quality, *viz.*

§. 960. 1. Symptom. "*In a Day, or two* (after their "Sickening) *there was a great Discharge of* mucous *Matter by* "*the Nose.*"*

§. 961. Whence (§. 960) it appears, 1. That there was a *Relaxation* of the Vessels, through which that *mucous* Matter was discharged; because, without a Relaxation of them, the Discharge could not have been made. And it is reasonable to think, that the same internal morbid Cause was at the same Time operating on the other Vessels, to bring on that general Relaxation which terminates in Death, according to §. 946.

§. 962. 2. It appears likewise from the same Symptom (§. 960) that the morbid Cause had a *dissolvent Quality;* for such a Quality in adventitious Particles, mixed with the Blood, only could weaken the Cohesion of the component Parts of the Vessels; and, unless the natural Cohesion was weakened, they could not become more lax than in a Time of Health.

* *Vid. Philos. Trans.* Numb. 358. P. 873.

§. 963. 2. SYMPTOM. "*Their Breath smelled offensively.**

§. 964. THIS Effect (§. 963) only could be produced by a *Putrefaction*, similar to what happens in dead Bodies; in which, when the Parts, either of the Fluids, or Solids, are disunited, and divided into Particles of a certain *Minuteness*, and *Volatility*, they affect the olfactory Nerves in that disagreeable Manner, which occasions us to say it *stinks*. And this Symptom (§. 963) I reckon an Evidence of great Putrefaction in the Blood of the Beast that has it, and an Argument that the morbid Cause had a *dissolvent* Quality.

§. 965. 3. SYMPTOM. "*Lastly* [there was] *a severe Purging* (*sometimes* bloody) *which terminated in Death.*

§. 966. AND as this Effect (§. 965) could not have been produced without a *dissolvent* Cause, dividing the component Parts of the animal Fluids into lesser, and relaxing the Vessels, it may justly be esteemed an Argument, that the morbid Cause of the Disease among the Cattle at *Islington* had a dissolvent Quality.

§. 967. THERE likewise appeared upon opening the Bodies of the Beasts, which died of the Sickness, the following Effects of the morbid Cause, which demonstrate that it had a *dissolvent* Quality; *e.g.*

§. 968. 1. EFFECT. "*A Putrefaction of the* Viscera, *which was found to increase in Proportion to the Time of the Illness.*†

§. 969. 2. EFFECT. "*In the Progress of the Distemper, or near the Death of the Cattle, their* Intestines *were the Colour of a Snake, their inner Coat excoriated by Purging.*‡

§. 970. 3. EFFECT. "*Their* Lungs *much inflamed with several* Cysts, *containing a yellow purulent Matter, many of them as big as a Nutmeg.*§

§. 971. HERE it may be observed, that an INFLAMMATION of any particular Part of the Body is commonly the consequence of a Relaxation of lymphatic Arteries in the Part inflamed, and of a Comminution of the Globules of Blood protruded into them. And therefore, when this Symptom happens in Cattle infected with a Murrain, we may reasonably conclude, that the Cause of their Sickness had a *dissolvent* Quality.

§. 972. BUT this *dissolvent* Quality in the Cause of the *Murrain* in the Cattle is evident, I think, beyond all Dispute, from the *Putrefaction* of their *Viscera* increasing in Proportion to the Time of their Sickness, §. 968. And from the *Excoriation* of the inner Coat of their Intestines, produced by the

* *Ibid.*
† P. 876.
‡ 877.
§ *Ibid.*

Acrimony of the Humours evacuated by Purging (§. 969); and from the several *Cysts* replete with *purulent* Matter, found in, or on their Lungs (§. 970.)

§. 973. It appears, from what has been observed, concerning the *Murrain* among the Cattle at *Islington*, in the Year 1714, that the Cause of that Distemper had a *dissolvent* Quality, destroying the Consistence of the Blood, producing Putrefactions, and a Relaxation of the Vessels, and Death as the Consequence, according to §. 946, *&c.*

§. 974. Hence (§. 973) we may draw the following Corollaries, *viz.*

§. 975. *Corol.* 1. That *Bleeding* Cattle under such a Distemper is a pernicious Practice, because it diminishes the vital Strength, and will hasten that general Relaxation of the Vessels, which terminates in Death.

§. 976. *Corol.* 2. That *Purging* the sick Cattle is likewise a destructive Method, for the Reasons mentioned §. 975.

§. 977. These Evacuations (§. 975, 976) are foreign to the Scope we should keep in View, and should never be made in Cattle, when infected with the Sickness under our present Consideration.

§. 978. It is very manifest from the Nature of the Cause productive of the *Murrain* among Cattle (§. 973) that the grand Intentions we should always have in our Thoughts, when we endeavour to cure Cattle sick of such a contagious Distemper, are these two following, *viz.*

§. 979. 1. To alter the *dissolvent* Quality of those adventitious Particles wherewith the Blood is infected, to prevent any further *Putrefaction* in the Body, and remove that which is begun.

§. 980. 2. To strengthen the natural Cohesion of the component Parts of the animal Vessels, to maintain the Vigour of the vital Organs, and thus to prevent that *general Relaxation* of the Vessels, which would soon terminate in Death. §. 946.

§. 981. And these (§. 979, 980) also are the *curative Indications* for Men sick of the *Plague*.

§. 982. Having premised the foregoing Observations, I shall give some Advices for Cattle sick of a contagious Disease; and for preserving the well Cattle from the Effects of the Infection.

§. 983. I. RULES *to* Farmers *for the Management of* sick Cattle *infected with the* Murrain, *or contagious Distemper.*

§. 984. *Rule* 1. THE Owner of Cattle in a contagious Season should have a faithful Servant continually in the Day-Time with his Herd (as the FARMERS in *Wiltshire*, and other Countries, have Shepherds with their Flocks of Sheep) to watch, and observe when any of them begin to grow sick; which the *Herdsman* may discover by the Beast's falling off from its usual Feeding, and a Dulness of its Eyes.

§. 985. *Rule* 2. As soon as the least Symptom of Illness appears in any Beast, separate it from the Herd, and convey it into some Place of Confinement; either into a BOOTH of *Boards* erected for this Service, or into some Inclosure.

§. 986. THE Observance of these Rules (§. 984. 985) is of great Importance; because little, or no Infection is emitted from the Body of the Beast immediately in the Beginning of his Sickness; but, as the Distemper proceeds, more Parts of the Blood are transmuted into the Quality of those which produced it, and more infectious Particles will be emitted from the Body of the sick Beast, and the Danger of other Cattle near the Sick will daily very much increase.

§. 987. As for the BOOTH, it should be made larger, or smaller, as the Number of the sick Cattle is greater, or lesser; to be for the Use of the sick Beasts, as *Infirmaries*, or Hospitals, are for sick Men. And it should be furnished with strong *Posts*, contrived so, as to facilitate the Giving Drenches.

§. 988. *Rule* 3. LET the Booth be erected, if it can be, at least a Quarter of a Mile from other Cattle, and from Houses inhabited. This I propose as a Means of Safety to Men, and Beasts.

§. 989. INSTEAD of a Booth, an *Inclosure* may be made with Hurdles five Feet deep, with strong Posts, to which the Beasts may be tied, for the Purpose mentioned (§. 987) but this Inclosure should be situated, according to *Rule* 3. § 988.

§. 990. *Rule* 4. As soon as the sick Beast is put into its Place of Confinement, give it one, or other of the following *Drenches*, for Altering the *dissolvent* Quality of the infectious Matter, which produced the Sickness, and for Preventing or Removing any incipient Putrefaction.

§. 991. I. DRENCH.

TAKE *of common* Salt *one Ounce, dissolve it in half a Pint of* River-Water, *then add to it six, or eight Ounces of* White-

Wine Vinegar, *or of the best other* Vinegar *that can be got, and of* Sack, *or* Mountain-Wine *one Quarter, or half a Pint; mix for a* Drench *to be given warm.* Or,

§. 992. II. DRENCH.

TAKE *of the* Flowers *of* Brimstone *half an Ounce,* Anis Seeds *finely powdered a Quarter of an Ounce, the best* Vinegar *and fine* Ale, *of each half a Pint; mix for a* Drench, *to be given warm.* Or,

§. 993. III. DRENCH.

TAKE *of* Gun-Powder, *beaten to a very fine Powder, half, or three Quarters of an Ounce,* Anis-Seeds *in a fine Powder one Quarter of an Ounce,* Vinegar *and* Sack, *or* Mountain-Wine, *of each half a Pint; mix for a* Drench, *to be given as the former.*

§. 994. *Rule* 5. LET one of these Drenches be given to the sick Beast every four Hours, Day and Night, 'till it either dies, or the morbid Symptoms disappear, and the Beast recovers an Appetite to Food. Or, instead of the foregoing medicated Drenches, give a Quart, or three Pints of TAR-WATER; and let the *Tar-Water* be made according to the Direction of the Bishop of *Cloyne* in his Book called *Siris.*

§. 995. *Rule* 6. AND two Hours after every Drench give one or other of the following *cordial* and *nutritive* DRINKS warm, as the former. But, if the OWNERS of Cattle shall think the Giving a Drench, or Cordial Drink, every two Hours *too frequent,* they may double the Quantities of them, and the Distance of Time between the Giving them.

§. 996. I. *Cordial* DRINK.

TAKE *the Crum of white* Bread *two Ounces, one* Nutmeg *finely powdered, and boil them in a Pint of Water 'till the Bread is dissolved, and by stirring it with a Spoon it becomes like* Water-Gruel; *then add to it one Pint of* Ale, *and one Ounce of white* Sugar, *and mix for a* Drink. Or,

§. 997. II. *Cordial* DRINK.

TAKE *of the Crum of white* Bread *three Ounces, of bruised* Cinnamon *one Drachm, boil them in a sufficient Quantity of* Water *'till it comes to a Pint and half, and looks like* Gruel; *then strain it, and add a Quarter of a Pint of*

Sack, *or* Mountain-Wine, *and one Ounce of white* Sugar, *for a* Drink.

§. 998. *Rule* 7. Two or three Times a Day let the sick Beast be tried whether it will feed, by setting before it, pretty warm, a Pint of *Barley*, or *Malt*, boiled 'till the Grain swell, become soft, and begin to break.

§. 999. *Rule* 8. TWICE a Day foment the TONGUE of the Beast with the following *Lotion* for four or five Minutes, by rubbing it with a Sponge wetted with it, made pretty warm.

§. 1000. *The* LOTION.

TAKE *of* Salt-Petre *three Drachms, of common* Salt *five Drachms, dissolve them in six Ounces of* Water, *and add to it ten Ounces of* Vinegar, *for a* Lotion; *and sometimes four Ounces of clarified* Honey *may be added to it.*

§. 1001. THIS Means may not only be serviceable for Keeping the Tongue, and Mouth in its natural Temper, and free from Ulcers; but such Particles of the Liquor will pass thro' the Membranes, and be conveyed into the Blood, as are proper to counter-act the Agency of the morbific Matter.

§. 1002. *Rule* 9. TWICE a Day let the Head, Breast, Region of the Heart, and Belly of the Beast, be rubbed well with a Sponge wetted with hot *Vinegar*.

(*To be continued.*)

COMPARATIVE VALUE OF MALT AND BARLEY AS FOOD FOR CATTLE.

A VERY interesting report has been published, detailing the experiments made by Mr. Lawes in feeding cattle, in order to test the comparative value of malt and barley. It appears that in the conversion of barley into malt there occurs a great loss of weight, consisting chiefly of moisture and non-nitrogenous substances, but also to some extent of nitrogenous substances. Thus a given weight of malt will contain less flesh-forming substances than the barley from which it was made. Milch cows who were fed daily with malt produced from 3lb. of barley were found to produce the same amount of milk as cows fed with that quantity of barley unmalted, but the milk of the cows fed upon malt did not yield so much cream as the milk of the cows fed upon barley. In fattening oxen it was found that on the whole

the beef of the barley-fed ones was in better condition and quality than the beef of the malt-fed oxen, but that some of the malt-fed cattle who were previously in good condition yielded a better quality of beef. There was great diversity in this respect among the malt-fed oxen, and the effect of malt would seem to depend far more than that of barley upon the constitution and health of the cattle. Sheep and pigs showed an advantage in favour of unmalted barley. "The general conclusion," says Mr. Lawes, "from the results of the direct experiments with cows, oxen, sheep, and pigs is that a given weight of barley is more productive both of the milk of cows and of the increase of live weight of fattening animals than the amount of malt and malt-dust that would be produced from it." Henceforth, therefore, it must be understood that the malt tax repeal agitation is not a farmer's matter at all, but is got up by the brewers who would like to increase the already enormous profits which they make in their trade.

ORDER IN COUNCIL.

At the Council Chamber, Whitehall, the 6th day of February, 1866. By the Lords of Her Majesty's Most Honorable Privy Council. Present:—Lord President, Duke of Somerset, Lord Stanley of Alderley, Sir George Grey, Bart., Mr. Bruce, Mr. Göschen.

WHEREAS by an Act passed in the Session of the eleventh and twelfth years of Her present Majesty's reign, chapter one hundred and seven, intituled "An Act to prevent until the 1st day of September, 1850, and to the end of the then next session of Parliament, the spreading of contagious or infectious disorders amongst sheep, cattle, and other animals," which Act has since been from time to time continued by divers subsequent Acts, and lastly by an Act passed in the session of the twenty-eighth and twenty-ninth years of the reign of Her present Majesty, chapter one hundred and nineteen, it is (amongst other things) enacted that it shall be lawful for the Lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time, to make such Orders and Regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such Order or Orders, of sheep, cattle, horses, swine, or other animals, or of meat, skins, hides, horns, hoofs, or other parts of any animals, or of hay, straw, fodder, or other articles likely to propagate infection; and to make any other Orders or Regulations for the purpose of giving effect to the provisions of the said Act, and again to revoke, alter, or vary any such Orders or Regulations; and that all provisions for any of the purposes aforesaid in any such Order or Orders contained shall have the like force and effect as if the same had

been inserted in the said Act; and that all persons offending against the same shall for each and every offence forfeit and pay any sum not exceeding twenty pounds, or such smaller sum as the said Lords or others of Her Majesty's Privy Council may in any case by such Order direct:

And whereas a contagious or infectious disorder now prevails among cattle within that part of the United Kingdom called Great Britain, which disorder is generally designated as the "cattle plague:"

And whereas, with a view to check the spreading of the said disorder, an Order dated the twenty-third day of November, one thousand eight hundred and sixty-five, has been made, under the authority of the said Acts, by the Lords of Her Majesty's Privy Council, consolidating and amending certain Orders, previously made for that purpose; and the same has since been altered and amended by subsequent Orders, bearing date the sixteenth day of December, one thousand eight hundred and sixty-five, and the twentieth day of January, one thousand eight hundred and sixty-six:

And whereas it is expedient to alter and amend the said Orders, in so far as they relate to the Metropolis: Now, therefore, the Lords of Her Majesty's Privy Council do hereby, in exercise of the powers given by the said Act so continued as aforesaid, order as follows:

1. The word "Metropolis," for the purposes of this Order, shall mean any parish or place within the jurisdiction of the Metropolitan Board of Works, exclusive of the City of London and the liberties thereof, and also exclusive of that part of the county of Kent which is included in such jurisdiction, and which is situated to the north of the Thames.

2. So much of the said Orders of the twenty-third day of November and the sixteenth day of December, one thousand eight hundred and sixty-five, as empowers the Clerk of Her Majesty's Privy Council to appoint Inspectors within the limits of the Metropolitan Police District, is hereby revoked.

3. So much of the said Orders of the twenty-third day of November and the sixteenth day of December, one thousand eight hundred and sixty-five, and of the Order of the twentieth day of January, one thousand eight hundred and sixty-six, as gives to any Local Authority any jurisdiction or power whatsoever within the Metropolis is hereby revoked; and all Orders made or notices published by any such Local Authority shall absolutely cease and determine so far as respects the Metropolis from the date of this Order coming into force, but without prejudice to their validity as respects any place beyond the Metropolis.

4. The Clerk of Her Majesty's Privy Council may appoint Inspectors for the Metropolis, and the Notice required by Section 8 of the Order of the twenty-third day of November, one thousand eight hundred and sixty-five, to be given to the said Clerk of the Council by persons in certain cases within the Metropolitan Police District, shall after the date of this Order be required to be given only by persons within the Metropolis.

5. No person having in his possession, or under his charge, any cow, heifer, bull, bullock, ox, or calf within the Metropolis, whether such animal has been in the Metropolitan Cattle Market or not, shall convey or remove, cause to be conveyed or removed, or attempt to convey or remove, any such animal out of the Metropolis, except into the City of London, or the liberties thereof: Provided that where any person occupies a farm or other contiguous premises situated partly within and partly without the Metropolis, he may, with a license from the Commissioner of Police of the Metropolis, which such Commissioner is hereby empowered from time to time to grant, and, if he think fit, to revoke, and for a time not exceeding seven days from the date of such license, move from one part of such premises to another any animal not affected by the cattle plague which has been in his own pos-

session for fourteen days previous to the date of such license, and has been marked in such manner as the said Commissioner of the Police may direct.

6. No person shall bring or send, or cause to be brought or sent any cow, heifer, bull, bullock, ox, or calf, to any market or fair, or to any place whatever in the Metropolis, for the purpose of exhibition or sale, excepting to the Metropolitan Cattle Market; and no person shall bring or send, or cause to be brought or sent, any such animal to the said Metropolitan Cattle Market, except for the purpose of being there exhibited and sold for immediate slaughtering; and no such animal so brought or sent shall be allowed to leave the said market, unless sold, and marked in the manner in which cattle are ordinarily marked for slaughter in the said market, *videlicet*, by clipping the hair off the end of the tail. And the officers of the said market shall cause such mark to be duly made. And no person shall buy or sell, or cause to be bought or sold, any such animal in the said market, except for immediate slaughtering; and every person buying any such animal in the said market shall slaughter the same, or cause the same to be slaughtered, within seven days of such purchase: provided that nothing contained in this clause of this Order shall be held to prohibit any person from exhibiting or selling on his own land or premises any animal belonging to him which has been on such land or premises for not less than fourteen days previous to such exhibition or sale, and is not affected by the cattle plague.

7. No person shall remove, or cause to be removed, any cow, heifer, bull, bullock, ox, or calf, along any highway, thoroughfare, or public place, within the Metropolis, except for a distance not exceeding 500 yards from part to part of the same farm, or to water, without a license from the said Commissioner of Police; and every such license shall state the number and description of animals licensed to be removed, and the place of their destination, and shall be valid only for twenty-four hours from the date thereof: Provided that this clause of this Order shall not apply to any animals intended for immediate slaughtering, which are sent to or from the said Metropolitan Cattle Market.

8. This Order shall come into operation on the fourteenth day of February, one thousand eight hundred and sixty-six.

9. Every person offending against this Order shall, in pursuance of the said Act, for every such offence forfeit any sum not exceeding twenty pounds which the Justices before whom he or she shall be convicted of such offence may think fit to impose.

(Signed) ARTHUR HELPS.

ANNO VICESIMO NONO.

VICTORIÆ REGINÆ.

CAP. II.

"An Act to amend the Law relating to Contagious or Infectious Diseases in Cattle and other Animals."

[*20th November*, 1866.

WHEREAS it is expedient to amend the Law relating to Contagious or Infectious Disease in Cattle and other Animals:

Be it enacted by the Queen's most Excellent Majesty, by and with the

Advice and Consent of the Lords Spiritual and Temporal, and Commons in this present Parliament assembled, and by the Authority of the same, as follows:

Short Title.

1. This Act shall be cited for all Purposes as "The Cattle Diseases Prevention Act, 1866."

Application of Act.

2. This Act shall not apply to *Ireland*.

Definition of certain Terms: "Person."

3. "Person" shall include a Body of Persons corporate or unincorporate:

"Cattle:"

"Cattle" shall mean Bull, Cow, Ox, Heifer, or Calf:

"Animal:"

"Animal" shall mean Cattle, as above defined, Sheep, Goats, and Swine:

"Cattle Plague:"

"Cattle Plague" shall mean the Rinderpest or Disease commonly called the Cattle Plague:

"Municipal Borough:"

"Municipal Borough" or "Borough" shall mean any Place for the Time being subject to an Act passed in the Session holden in the Fifth and Sixth Years of the Reign of King *William* the Fourth, Chapter Seventy-six, intituled *An Act to provide for the Regulation of Municipal Corporations in* England and Wales, which is not assessed to the County Rate of any County by the Justices of such County:

"County:"

"County" shall not include a County of a City or County of a Town, but shall include any Riding, Division, or Parts of a County having a separate Commission of the Peace:

The Liberty of *St. Albans* and the Liberty of the *Isle of Ely*, and the Stoke of *Peterborough*, shall respectively be deemed to be separate Counties, but all other Liberties and Franchises of Counties shall be considered as forming Part of the County by which they are surrounded, or if partly surrounded by Two or more Counties, then as forming Part of that County with which they have the longest Common Boundary:

"The Metropolis:"

"The Metropolis" shall include all Parishes and Places in which the Metropolitan Board of Works have Power to levy a Main Drainage Rate:

Every Place that is not, according to the foregoing Definitions, a Borough, a County, or a Part of the Metropolis, or is not separately mentioned in the Schedule hereunto annexed, shall be deemed to form Part of the County, as herein-before defined, to the County Rate of which it is assessed, or, if not so assessed, of the County within which it is situate.

Definition of "District," "Local Authority," "Local Rate," and "Clerk of Local Authority."

4. For the Purposes of this Act "District," "Local Authority," "Local Rate," and "Clerk of Local Authority," shall respectively mean the Places, Bodies of Persons, Rate, and Officer in the First Schedule hereto annexed in that Behalf mentioned: Provided that within the City of *London* and the Liberties thereof the Court of the Lord Mayor and Aldermen shall, for all the Purposes of this Act, except that of making a Rate, be deemed the Local Authority, but for the Purpose of making a Rate for the Purposes of this Act the Metropolitan Board of Works shall be the Local Authority.

Appointment of Local Authority in Counties in Scotland.

5. As soon as conveniently may be after the passing of this Act the Commissioners of Supply in every County in *Scotland* shall meet and nominate not less than Four or more than Fifteen of their Number to act on the County Board for the Purposes of this Act, and shall intimate to the Lord Lieutenant of the County and the Convener of the County the Number and Names of the Persons so appointed; and the Lord Lieutenant shall forthwith nominate an equal Number of Persons being Tenants of Agricultural Subjects, valued in the Valuation Roll in force for the Time at One hundred Pounds a Year or upwards, within such County to act on the County Board, and shall intimate the Names of the Persons so nominated to the Convener of the County, and the Persons so nominated by the Commissioners of Supply and Lord Lieutenant respectively, and also the said Lord Lieutenant, the Convener of the County, and the Sheriff of the County, or, in his Absence, any of his Substitutes within such County as he may direct, shall constitute the Local Authority; and so far as not otherwise provided by this Act such Local Authority shall have all the Powers conferred on the Local Authority by this Act, and shall have Power to elect a Chairman, specify a Quorum, and make all Regulations necessary for carrying the Purposes of this Act into effect.

Power to assemble adjourned Sessions.

6. Where the General or Quarter Sessions in any County do not stand adjourned to some Day not later than Seven Days after the passing of this Act, such Sessions shall notwithstanding be deemed, by virtue of this Act, to stand adjourned to *Monday* in the First Week succeeding the Week in which this Act passes.

Meeting of Local Authority in Scotland.

7. The First Meeting of the Local Authority in *Scotland* shall be held on a Day to be fixed and notified by the Convener of the County, and the Local Authority may adjourn from Time to Time as they may think fit.

Power to Local Authority to form Committee of its own Members and others.

8. Any Local Authority may form One or more Committee or Committees consisting wholly of its own Members, and partly of such other Persons, being rated Occupiers in the District and qualified in such other Manner as the Local Authority may determine, and may delegate to such Committee all or any Powers conferred on them by this Act, excepting the Power to make a Rate, and may from Time to Time revoke or alter any Power so given to such Committee.

A Committee may elect a Chairman of their Meetings. If no such Chairman is elected, or if the Chairman elected is not present at the Time appointed for holding the same, the Members present shall choose One of their Number to be Chairman of such Meeting. A Committee may meet and adjourn as they think proper. Every Question at a Meeting shall be determined by a Majority of Votes of the Members present, and voting on that Question; and in case of an equal Division of Votes the Chairman shall have a Second or Casting Vote.

The Proceedings of a Committee shall not be invalidated by any Vacancy or Vacancies amongst its Members, or, in case of a Committee appointed by the General or Quarter Sessions of a County, by the Termination of the Sessions by which they were appointed: Provided always, that in the Case of the Formation of Two or more Committees, such Committees shall act

according to such Rules as shall be laid down for their Guidance by such Local Authority.

Appointment of Inspectors and other Officers.

9. Every Local Authority shall with all convenient Speed appoint such Number of Inspectors and other Officers as it shall think necessary for carrying into effect the Provisions of this Act within its District. It shall assign them such Duties, and award them such Salaries or Allowances, as it thinks expedient; and no Stamp shall be required on the Appointment of any Officer made in pursuance of this Act. It may revoke any Appointment so made: Provided that all Persons appointed Inspectors before the passing of this Act under the Authority of any Order of the Lords of Her Majesty's Privy Council relative to the Cattle Plague, and being such at the passing of this Act, shall be Cattle Inspectors to act in the execution of this Act in and for the Districts for which they respectively were appointed; but any such Appointment may at any Time be revoked by the Authority that would be empowered to revoke it if it had been made under this Act.

The Certificate of an Inspector of the Local Authority that an Animal is affected by Cattle Plague shall for the Purposes of this Act be conclusive Evidence in all Courts of Justice and elsewhere of its having been so affected.

Power of Entry for Inspectors, &c.

Penalty for impeding Inspectors

10. Any Inspector or other Officer authorized to carry into effect the Provisions of this Act may, at all Times, enter any Field, Stable, Cow Shed, or other Premises within his District where he has reasonable Grounds for supposing that Cattle affected by the Cattle Plague are to be found, for the Purpose of carrying into effect the Provisions of this Act; and if any Person refuses admission to or obstructs or impedes or aids in impeding or obstructing any such Inspector or other Officer, he shall for each Offence be liable to a Penalty not exceeding Twenty Pounds: Provided always, that such Inspector shall, if required, state in Writing the Grounds on which he has entered such Premises for the Purpose aforesaid.

PART I.

TEMPORARY PROVISIONS.

Limit of Duration of Part I.

11. Part I. of this Act shall continue in force till the Fifteenth Day of *April* One thousand eight hundred and sixty-six, and no longer, unless continued or renewed by Order of Her Majesty in Council; and it shall be lawful for Her Majesty, by Order in Council, from Time to Time to continue, or to renew if expired, all or any of the Provisions in this Part of this Act contained for such Time as is specified in such Orde.

Slaughter of diseased Animals.

Power to slaughter diseased Animals.

12. Every Local Authority shall cause all Animals affected with the Cattle Plague within its Diistrict to be slaughtered, and shall by way of Compensation for every Animal so slaughtered, pay to the Owner thereof such Sum not exceeding Twenty Pounds, and not exceeding One Half of the Value of the Animal immediately before it was affected with the Cattle Plague, as to such Local Authority may seem fit.

Burial of diseased Animals.

13. Every Local Authority shall cause every Animal that has died of Cattle Plague, or has been slaughtered in consequence of being affected with Cattle Plague within its District, to be buried as soon as possible in its Skin in some proper Place, and to be covered with a sufficient Quantity of Quicklime or other Disinfectant, and with not less than Six Feet of Earth.

Purification of Sheds, &c. of diseased Animals.

14. Every Local Authority shall, within its District, cause the Yard, Shed, Stable, Field, or other Premises in which any Animal affected with Cattle Plague has been kept while affected by the Disease, or has died or has been slaughtered, to be thoroughly cleansed and disinfected, and all Hay, Straw, Litter, Dung, or other Articles that have been used in or about any such Animal to be burnt or otherwise destroyed; and no fresh Animal shall be admitted into any Yard, Shed, Stable, Field, or other Premises in which any Animal affected with Cattle Plague has been kept while affected by the Disease, or has died or been slaughtered, until the Expiration of Thirty Days after the cleansing and disinfecting of such Premises in pursuance of this Act; and every Local Authority shall direct the disinfecting the Clothes of, and the Use of Due Precautions by Inspectors, Cattle Overseers, and others in contact with Animals affected by the Cattle Plague, with a view to prevent the spreading of Contagion.

Power to order slaughter of Cattle herded with diseased Animals.

15. A Local Authority may, if it thinks fit, cause to be slaughtered any Animal that has been in the same Shed or Stable, or in the same Herd or Flock, or in contact with any Animal affected with Cattle Plague within its District; and the Owner of any Animal so slaughtered may either dispose of the Carcase on his own Account, with a Licence from some Officer appointed in that Behalf by a Local Authority, or may require the Local Authority to dispose of the same, in which Case such Local Authority shall pay to the Owner thereof, by way of Compensation, such Sum, not exceeding Twenty-five Pounds, as may equal Three Fourths of the Value of the Animal slaughtered: Provided always, that the Lords of Her Majesty's Most Honourable Privy Council, or any Two or more of them. may reserve Animals (ordered to be slaughtered as aforesaid) for the Purpose of experimental Treatment.

Power to ascertain Value of slaughtered Animals.

16. The Local Authority may require the Value of any Animal slaughtered under this Act to be ascertained by Officers of the Local Authority or by Arbitration, and generally may impose Conditions as to Evidence of the Slaughter and Value of the Animals slaughtered: Provided that no Compensation shall in any Case be paid in respect of any Animal found affected with Cattle Plague in a Market or on a Highway, or in respect of any Animal which has been moved or otherwise dealt with in contravention of this Act, or any Order of a Local Authority made in pursuance thereof.

Movement of Cattle.

Regulations as to Movement of Cattle.

17. All Cattle brought by Sea from any Place in *Great Britain* or from any Place out of the United Kingdom into any Town or Place in *Great Britain* shall be marked by clipping the Hair off the End of the Tail, and no such Cattle shall be removed alive from such Town or Place except by Sea.

No Cattle shall be moved on any Railway before the Twenty-fifth Day of *March* One Thousand eight hundred and sixty-six.

PART II.

Expenses.

Expenses of Local Authority.

18. All Expenses incurred by a Local Authority in pursuance of this Act, including any Compensation payable by it in respect of Animals slaughtered in Pursuance of this Act, shall be defrayed out of the Local Rate as defined by this Act, or out of a separate Rate to be levied in all respects in the same Manner as the Local Rate, and included under the Term "Local Rate."

Any Person who is not the Owner of the Premises in respect of which he is rated, under this Section, to the Local Rate may deduct from the growing Rent due to the Owner of such Premises One Half of the Rate payable by him for the Purposes of this Act, and every Owner shall allow such Deduction accordingly.

"Owner" for the Purposes of this Section shall mean the Person for the Time being entitled to receive the Rackrent of the Premises in respect of which the Rate is made on his own Account, or who would be entitled to receive the same if such Premises were let at a Rackrent, including under the Term "Rackrent" any Rent which is not less than Two Thirds of the net annual Value of the Premises out of which the Rent issues.

Every Local Authority shall have Power, notwithstanding any Limit in any Act of Parliament, to levy a Local Rate to the Amount required for the Purposes of this Act, but every Rate or Increase of Rate levied under this Section shall in all Precepts for the Levy thereof be described as a separate Rate or separate Item of Rate, and when collected from the individnal Ratepayers it shall be collected as a separate Rate or specified as a separate Item of Rate.

Power to remit Rate in certain Cases.

19. Where, before the passing of this Act, any person has suffered so great a Loss of Cattle by Cattle Plague as to entitle him in the Opinion of the Local Authority to a Remission in whole or in part of any Rate due from him for the Purposes of this Act, such Remission may be granted by the Local Authority.

Application of Balance of voluntary Rate.

When within the District of any Local Authority any Sum has been raised by a voluntary Rate for the Purpose of paying for Cattle slaughtered with a view of preventing the Spread of the Cattle Plague, the Local Authority may, with the Consent of the Managers of such voluntary Rate, after satisfying itself that the Rate or such Portion of the Rate as has been expended has been duly expended for the Purpose aforesaid, and having received from such Managers the Balance of such Rate, if any, apply it to the Purposes of this Act, and in such Case the Sums proved to the Satisfaction of such Local Authority to have been paid by any Person to such voluntary Rate, and to have been duly accounted for, shall be deducted from any Rate payable by such person under the Provisions of this Act.

Amount of Insurance that may be recovered on slaughtered Animals.

20. Where any Animal has been slaughtered under the Provisions of this Act, the Owner of such Animal shall not be entitled to recover in respect of the Insurance of such Animal any Sum whieh, together with the Payment he receives for such Animal under the Provisions of this Act, shall exceed the Sum which he would otherwise have been entitled to receive in respect of such Insurance.

Mode of levying and recovering Assessments in Scotland.

21. The Local Authorities in Counties in *Scotland* shall from Time to Time give Notice to the Commissioners of Supply of the Sums necessary to be provided under the Provisions of this Act by means of the Local Rate, and the Amount so intimated shall be assessed and collected by the Commissioners of Supply according to the Real Rent of Lands and Heritages as appearing on the Valuation Roll in force for the Year, and pay over the same to the Local Authority, and the Local Authority in Burghs in *Scotland* shall in like Manner assess and collect the Amount required to be raised by Local Rate within such Burgh, and all such Assessments shall be payable by the Tenant who shall be entitled to deduct One Half thereof from the Rent payable by him to the Proprietor, and all the Provisions in regard to the Recovery of Assessments in the Act Twentieth and Twenty-first *Victoria*, Chapter Seventy-two, intituled *An Act to render more effectual the Police in Counties and Burghs in* Scotland, shall be held to be incorporated in this Act in so far as not inconsistent with its Provisions.

As to the Mortgage of Rates in certain Cases.

22. Whenever the Rate levied or to be levied for the Purposes of this Act exceeds the Sum of Sixpence in the Pound, a Local Authority may, for the Purposes of defraying any further Costs, Charges, and Expenses under this Act, borrow and take up at Interest, on the Credit of the Local Rate, any Sums of Money necessary for defraying such Costs, Charges, and Expenses; and for the Purpose of securing the Repayment of any Sums of Money so borrowed, together with such Interest as aforesaid, the Local Authority may mortgage and assign over the said Local Rate for any Period not exceeding Seven Years to the Persons by or on behalf of whom such Sums are advanced; and in any Case where the Rate levied or to be levied for meeting the Charges of this Act shall exceed Ninepence in the Pound, the Lords of the Treasury may, upon Application from the Local Authority, extend the Term to any Term not exceeding Fourteen Years accordingly.

Certain Clauses of 10 & 11 Vict. c. 16. incorporated.

23. The Clauses of the Commissioners' Clauses Act, 1847, with respect to Mortgages to be created by the Commissioners, shall form Part of and be incorporated with this Act, and any Mortgagee or Assignee may enforce Payment of his Principal and Interest by Appointment of a Receiver. In the Construction of those Clauses the Commissioners shall mean "the Local Authority."

Power to Public Works Loan Commissioners to lend Money.

24. The Public Works Loan Commissioners, as defined by "The Public Works Loan Act, 1853," may, out of Monies at their Disposal, with the Approval of the Lords Commissioners of the Treasury, advance to any Local Authority, upon the Security of the Local Rate, without any further Security, to be repaid, with Interest, within any Period as aforesaid, any Sums of Money to be applied by such Authority in carrying into effect the Purposes of this Act.

Miscellaneous.

Reports by Local Authority to Privy Council.

25. Every Local Authority shall report to the Privy Council the State of the Cattle Plague in their District, and give such other Information with respect to the Cattle Plague, in such Form and at such Time as the Privy Council may require.

Power to purchase Land for Burial of diseased Animals.

26. Any Local Authority may purchase or hire a Piece or Pieces of Land for the Purpose of burying therein Animals dying of Cattle Plague or slaughtered under this Act, and, in the case of Seaports, for the Purpose of providing proper Places for the Slaughter of Cattle which under the Provisions of this Act cannot be removed alive from such Ports; and in order to facilitate any such Purchase the Provisions of "The Lands Clauses Consolidation Act, 1845," relating to the Purchase of Land by Agreement, shall be incorporated with this Act.

Legal Proceedings and Saving Clauses.

Penalty for Disobedience of Act or Order.

27. If any Person acts in contravention of any Provisions in this Act contained, or any Order made by a Local Authority in pursuance of this Act, he shall for each Offence incur a Penalty not exceeding Twenty Pounds, and where any such Offence is committed with respect to more than Four Animals, a Penalty not exceeding Five Pounds for each Animal may be imposed instead of the Penalty of Twenty Pounds.

Local Authority in Scotland may apply to the Procurator Fiscal.

28. In the event of any Person refusing or delaying to comply with the Order of any Local Authority in *Scotland*, the Local Authority may give Information thereof to the Procurator Fiscal of the County or Burgh, who may apply to the Sheriff for a Warrant to carry out such Order, and such Warrant may be executed by the Officers of Court in the usual Way.

Sheriff in Scotland to have concurrent Jurisdiction.

29. In *Scotland* all the Judicial Powers given to Justices and Quarter Sessions, or to Magistrates in Boroughs, by this Act, may also be exercised by the Sheriff of the County or the Sheriff Substitute.

Recovery of Penalties.

30. Penalties under this Act, and Expenses directed to be recovered in a summary Manner, may be recovered before Two Justices in manner directed by an Act passed in the Session holden in the Eleventh and Twelfth Years of the Reign of Her Majesty Queen *Victoria*, Chapter Forty-three, intituled *An Act to facilitate the Performance of the Duties of Justices of the Peace out of Sessions within* England *and* Wales *with respect to summary Convictions and Orders*, or any Act amending the same, and in *Scotland* by summary Complaint before the Sheriff, Sheriff Substitute, or Two Justices, or in Boroughs before the Magistrates, in manner provided by the Summary Procedure Act, 1864.

Any Railway Company or other Body Corporate may appear before any Justice, Sheriff, or Sheriff Substitute by any Member of their Board of Management, or by any Officer authorized in Writing under the Hand of any Director or Manager of the Company.

Appeal.

31. If any Party feels aggrieved by the Dismissal of his Complaint by the Justices, or by any Determination or Adjudication of the Justices with respect to any Penalty or Forfeiture under this Act, the Party so dissatisfied may appeal therefrom, subject to the Conditions and Regulations following:

1. The Appeal shall be made to some Court of General or Quarter Sessions for the County or Place in which the Cause of Appeal has arisen, holden not less than Fifteen Days and not more than Four Months after the Decision of the Justices from which the Appeal is made:

2. The Appellant shall, within Three Days after the Cause of Appeal has arisen, give notice to the Clerk of the Petty Sessional Division for which the Justices act whose Decision is appealed from of his Intention to appeal, and of the Grounds thereof, and in *Scotland* to the Clerk of the Peace for the County:
3. The Appellant shall immediately after such Notice enter into a Recognizance, before a Justice of the Peace, with Two sufficient Sureties, conditioned personally to try such Appeal, and to abide the Judgment of the Court thereon, and to pay such Costs as may be awarded by the Court:
4. The Court may adjourn the Appeal, and may make such Order thereon as they think just:

But nothing in the present Section respecting Appeals shall affect any Enactments relative to Appeals in Cases of summary Convictions or Adjudications in the City of *London* or the Metropolitan Police District.

Confirmation of Orders.

32. All Orders made by the Lords of Her Majesty's Privy Council in pursuance of the Act of the Session of the Eleventh and Twelfth Years of the Reign of Her present Majesty, Chapter One hundred and seven, and all Orders made and Notices published by Local Authorities under the Powers conferred on them by such Orders of the Lords of Her Majesty's Privy Council, shall be deemed to have been duly made and authorized by the said Act, and shall, so far as they are consistent with this Act, remain in full Force until they are revoked or have expired by Lapse of Time.

Expenses incurred prior to passing of Act.

33. All Expenses already incurred by any Local Authority as defined by the said Orders of the Lords of Her Majesty's Privy Council previous to the passing of this Act, in publishing any Notices or Advertisements in pursuance of or under any Authority derived from any Order of the Lords of Her Majesty's Privy Council made in pursuance of the said Act, shall be deemed to have been duly charged on any Rate out of which such Expenses have been defrayed; or such Expenses may be paid in like Manner as Expenses incurred pursuant to this Act.

Continuance of Act.

34. This Act shall continue in force until the First Day of *June* One thousand eight hundred and sixty-seven, and until the End of the then Session of Parliament, and no longer, except in so far as respects the Power of levying Rates for repaying any Sums borrowed under the Provisions of this Act: Provided that it shall be lawful for Her Majesty in Council at any Time to suspend the Operation of this Act as respects the Slaughter of Cattle.

SCHEDULE.

Districts of Local Authority.	Description of Local Authority of District set opposite its Name.	Local Rate.	Clerk of Local Authority.
ENGLAND AND WALES.			
Counties except the Metropolis.	The Justices in General or Quarter Sessions assembled.	The County Rate, or Rate in the Nature of a County Rate.	Clerk of the Peace.
The Metropolis ...	The Metropolitan Board of Works.	Rate or Fund applicable to the Payment of the general Expenses of the Board.	The Clerk of the Metropolitan Board of Works.
Boroughs	The Mayor, Aldermen, and Burgesses acting by the Council.	The Borough Fund or Borough Rate.	Town Clerk.
District of Local Board of Oxford.	The Local Board...	Rate leviable by the Local Board.	Clerk of the Local Board.
SCOTLAND.			
Counties, including any Town or Place which does not return or contribute to return a Member to Parliament.	The Persons appointed in Sec. 5 of this Act.	Rate appointed to be levied in Sec. 21 of Act.	Clerk of Supply.
Burghs which return or contribute to return a Member to Parliament.	The Magistrates and Town Council.	Do. Do. ...	Town Clerk.

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

THE SIBERIAN CATTLE PEST.

At the last meeting of the International Veterinary Congress an account of this dreadful malady was given by Professors Unterberger and Rawitsch. According to these learned professors this malady is the well-known Carbon of the French, the Milzbrand of the German, the Sibirskaja Jaswa of the Russian, and the Anthrax or Carbuncular Disease of the English. Some of the German colonists in Russia call it the boil disease—*Beulenseuche*. It prevails alike in men and animals, not only in the herbivora, but also in the carnivora and omnivora, likewise birds and fishes. In man, pustula maligna is the result of it. This eruption appears on those parts of the body which are unprotected by clothing, and individuals who are in the habit of sleeping in the open air are most subject to it. It is highly contagious, and it is supposed that it may be communicated by the flies from one individual to another. It is most fatal to horses and neat cattle, but is less severe amongst sheep and goats. The statistics of the mortality were not given, as they were not then published. The Tartars, who are known to feed on horse-flesh, are most subject to the disease, as when they are slaughtering diseased horses in hot weather, when this pest mostly prevails, they are known to be half naked. The learned Professor Unterberger, who says he resided eighteen years in the government of Simbirsk, in which there are a great many Tartars, has never found that cooked horse-flesh, on which these Tartars feed, had communicated the disease.

The course of the malady is as follows—After a slight fever there appears on different parts of the body, in horses principally on the lacteal gland, or sheath, in front of the chest, or under the jaw—in cattle at the dewlap—in sheep and goats in those places which are bare of wool or hair—in swine on the upper part of the neck and throat—swellings which soon increase to an enormous extent; in horses often to the size of a child's head, at first white and soft, containing a yellow fluid, but they soon harden, and when cut present a hard surface of a yellow colour, with red streaks and spots. Most of the patients die from twelve to twenty-four hours after the attack, rarely they last three days. After death the

rigor mortis and putrefaction soon set in. In the pathological alterations, enlargement of the spleen is constantly found; it is gorged with black, thick, tar-like blood. Yellow bile-like effusions, in different parts, are also found, principally in the lower parts of the mesentery. It is well known that vibriones have been discovered in the blood of animals affected with carbon anthrax; first by Fuchs, after by many other learned physiologists. I shall only mention Pallender, Brauell, Delafond, Leisering, who have all made researches on this subject. Brauell has found them repeatedly in the blood of animals which have died of the boil disease, and even found them in the blood of one of the servants at the School of Darpat, who had died of the blue vesicular fever, in which he was the first to detect them. Most important is the discovery made by Brauell, viz., these corpuscles are found in the blood of living animals affected with these diseases.

The Siberian pest (and the learned professor speaks from experience) is only propagated by actual contact, not by volatile infection, and only when the virus is brought in direct contact with the blood of an individual is the disease communicated from one to another.

Concerning the causes of this pest, formerly they were attributed to damp sultry air, but more recently they are attributed to the underground waters, which, for want of drainage, keep the soil wet and damp; "But from my experience," the professor says, "I know that horses and other animals which are constantly out of doors, night and day, suffer less from the disease than those which are stabled at night. The treatment adopted in Russia is that which is prescribed by the French and Germans: but no treatment avails. When the malady prevails epizootically all animals attacked die. In the year 1837, in the district where I then was in practice, 1900 horses were lost by this dreadful malady. However, when the malady has prevailed for some time, then, as I have experienced when under Strauss, in 1833, in Mezöhegyes, the application of cold water and cauterizing the tumours with the red-hot iron, after cutting them open, and the application of different substances, with mineral acids given internally, were followed with good results. Venesection and change of diet I have employed as prophylactics. I have been a long time in the malarian districts. I have found that sequestration of the sick animals was useless, as I have often been obliged to keep horses belonging to the Crown in the same stables with those of other parties actually suffering from this disease, but, these being well fed and cared for, they never took it."

Professor Rawitsch stated that this pest had been described and was well known in Germany in the last century. At that time there were not only no veterinary surgeons in Russia, but even no medical men. In the course of time much experience had been obtained on this malady; and after the gigantic work of Heusinger, which will always hold its place, it would be needless to enter on the particulars of this malady. There are, however, two points on which it might be necessary to enter—1st, the nosology of the malady; 2nd, the etiology of an epizootic which last year prevailed so extensively in Russia. In respect to the nosology, we may state in a few words that this Siberian pest is not a pest of Siberia, but a Russian pest. In the last century and before it was a pest of all Europe, but as the principal causes of it in a great measure are found in Siberia, hence it was first observed in Siberia, and scientifically described by Pallas, and from that time it has obtained the name of the Siberian pest; it is, however, not a malady *sui generis*, but simply the Anthrax. This Anthrax does not appear in one form only, but assumes all the different forms which are generally observed in anthrax; there are, for instance, the simple feverish form, the boil form, and the apoplectic form (which I have myself observed). The malady principally attacks horses; other domestic animals suffer less from it; sheep are the least affected, inasmuch as the breeders of sheep are more careful, and, further, sheep are not usually kept in marshy lands full of malaria; there being but few sheep kept in the wooded and low part of the steppes, where the malady generally breaks out, they being generally on the dry parts and high ground. In the governments of St. Petersburg and Novgorod, Olonetz, &c., there are a great number of horses kept, and large herds of cattle, as has been stated by Professor Unterberger; and there the malady developes itself most frequently on those animals which are exposed to the night air; the cattle, however, are stabled at night, but the horses, after a hard day's work, are turned out to feed in the marshes, where they pass the night. This is evidently the cause why horses are more frequently attacked by this malady; besides this, there is another etiology to which I would draw your attention, that is, an artificial malaria which is created in the governments of St. Petersburg, Novgorod and Olonetz, by the canals which connect the Volga and other rivers with the Neva and the Ladoga Sea. The boats on these canals are drawn by horses—thousands are constantly employed—and the indolence of the peasant is so great that no care is taken of them; as long as he gets the money for the hire he never

thinks of providing a sufficient quantity of fodder. Many horses die from sheer exhaustion and want; they do not bury them, but let them rot on the spot or throw them into the water. The malady which ordinarily prevails from the want of fodder and exhaustion through hard work increases tenfold by this miasma from the exposure of these carcasses. From the official report it is shown that 10,000 animals died last year; most of them horses, few cattle, and fewer sheep, in the five governments of St. Petersburg, Novgorod, Olonetz, Tver, and Jaroslav, where also above 1000 persons died of the malady. As to the contagious nature of the malady, in my opinion it is highly so, and the reports of the medical faculty show that not only has the pustula maligna, but also the boil or carbuncular form of the disease been produced in the human subject, not only by the poison or virus coming in contact with the blood, but by simple contact with the skin of the hand.

I have given this abstract of the statement of the learned professors on the Siberian pest to show the difference between it and the rinderpest, with which it has often been confounded. If we read all that has been written on cattle murrain during the last 1000 years we find that sometimes they are made to merge into one another; at other times they are correctly described as to their different characteristics, but still considered as one and the same disease. There is little doubt that the boils of the one have often been mistaken for the eruption of the other.

The most striking differences are that the rinderpest is a malady which exclusively affects the ruminants, and more especially the ox tribe, and that an animal having once recovered from it, or having been inoculated successfully, has immunity from it for life, no instance being on record of an animal having taken it twice, though exposed to the contagion, or even inoculated with the virus. This immunity is the only analogy it bears to the smallpox in the human subject; the eruptions which have sometimes been observed in the rinderpest being very different from the pustules of either cowpox or smallpox. The origin of the rinderpest is also clearly traceable to one particular district, viz., the Caucasian steppes in Asia, the spontaneous outbreak being confined to that particular breed, the steppe cattle, through the volatility of its contagion, &c. The Siberian pest attacks, as stated by the learned Russian professors, both man and all animals, and even birds and fishes, but is always more fatal to horses. It is not confined as to origin to one

district, but prevails all over Russia; is developed in the marshy districts by a special malaria; spreads by actual contact, and in more than one particular resembles the pest of olden times, which so frequently devastated the European Continent.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

ON THE EDUCATION AND TRAINING OF THE VETERINARY PUPIL; THE PRESENT STATE OF VETERINARY MEDICINE AND VETERINARY LITERATURE; AND ON THE ART OF HORSESHOEING, AND ITS RELATION TO THE VETERINARY PROFESSION.

An Inaugural Address delivered before the Members of the Lancashire Medical Association, January the 10th, 1866. By W. HAYCOCK, Veterinary Surgeon, M.R.C.V.S., President of the Association, &c.

GENTLEMEN,—I am chosen your President for the year 1866, and it devolves upon me to deliver the Inaugural Address common to the occasion.

In the remarks I shall advance I will endeavour to make the hour allotted to me as interesting and as practically useful as I can. I shall treat upon a variety of topics which, I trust, will be found to bear closely upon what I believe we all strongly desire, viz., the progress of that profession of which we are members, and with which our destinies in life are so intimately associated.

Our society has now commenced the fourth year of its existence. During the first year our meetings were of a vague, irregular character. The gentleman who presided during that period escaped altogether the onerous and critical duty of delivering an inaugural address, an omission which, I trust, will not be repeated.

The second year of our life was marked by more stirring events relating to the welfare of our association. Our meetings during that period were ably presided over by Mr. T. Greaves, of Manchester, whose inaugural address upon the occasion of his election was stamped throughout by that deep earnestness in our cause so characteristic of the man.

The third year of our career was noted by a more complete realisation of the status and objects of the society, by the greater development of societies of a kindred character, and by the growth of that steady settled conviction which now appears to have impressed itself upon the mind of every right-thinking veterinary surgeon, of the necessity and high practical value of associations

like the present, not only to ourselves, but to owners of stock in general.

Under the distinguished presidency and the untiring exertions of our friend Mr. Peter Taylor, we advanced from our tavern assemblages to the quarters we now occupy, where at least, gentlemen, we live under the shadow of a noble institution, devoted alike to the progress of science and of art.

During the past three years of our existence we have had a number of papers and essays treating upon a variety of diseases peculiar to the equine aud bovine species, essays many of them of great practical value. Amongst such papers I may enumerate one upon "Influenza," by Mr. Greaves; one upon "Inflammation, and the General Principles of its Treatment," by Mr. P. Taylor; one upon "Tetanus," by Mr. Lawson; one upon "Puerperal Fever," by Mr. Howell, of Rochdale; one upon "Laminitis," by Mr. Brooks, of Prestwich; and, above all, one upon "Parturition," by that veteran of our ranks, Mr. Cartwright, of Whitchurch. These essays, gentlemen, I especially consider of mark and value; and I trust that others equally valuable, and of a like character, will regularly follow. I cannot, however, forbear remarking upon the utter absence of all essays and contributions upon the anatomy and physiology of the principal of our domesticated animals. In concluding these preliminary observations, I may observe that our meetings to all who have duly attended them have been both agreeable and highly instructive; but one fact of peculiar significance has constantly presented itself upon every occasion—it is this, the extraordinary difference of opinion which has manifested itself amongst us during debate; scarcely two practitioners have agreed in opinion upon matters relating to the theory or the best practice to pursue in the treatment of the most simple forms of disease. Modes of practice, based upon opinions the most adverse and diverse, have been advanced upon every occasion with a profuseness truly surprisiug.

The subjects I propose to speak upon in the course of my address this evening are the following:

1. The education and training of the veterinary pupil.
2. The present state of veterinary medicine and veterinary literature.
3. The cattle plague.
4. Horseshoeing, and the relation of the art to the practice and profession of the veterinary surgeon.

The Education and Training of the Veterinary Pupil.—The training of the veterinary pupil is a matter of grave importance, both to himself and to society.

Upon the right training and right education of the pupil will depend his usefulness as a man. A man is of no value except in so far as he is of use.

A veterinary surgeon, to become generally eminent, will have to be a thoroughly practical and a thoroughly scientific man; and

yet, to train the pupil so as to impart a purely scientific education would be to educate him wrongly. The practice of veterinary medicine is an art. The veterinary art is closely allied to the sciences of anatomy, chemistry, and physiology.

Art, in almost every branch of human industry, flourished and attained a high degree of usefulness long before the science to which it may now be allied was necessary. For centuries before chemistry existed as a science the art of dyeing was practised, and, in fact, had attained to great perfection. In like manner, the seafaring men of old guided their ships from one coast to another by the stars long before astronomy and magnetism were known as sciences. Art in all cases may be said to precede science. Science is an afterbirth, and its growth is generally slow. Art is the handmaid to science. Science gives the why and the wherefore of art.

The knowledge of this fact points to a principle of great practical value in the education of the veterinary pupil. It is this—first, to thoroughly educate the pupil in the art of his profession; after which the true value and place of the sciences pertaining to his art will, in all probability, become manifest to him.

Parents are anxious for their sons to possess a thorough knowledge of the science belonging to our profession; hence, many of them may be highly educated, and when so educated are rarely of use. Educate highly in the sciences allied to our profession, and ten to one but the pupil will consider it beneath him to work; and unless he can work with his hands and his head he will prove a disappointment to every one. What the community demands from the veterinary surgeon, and which it will have sooner or later, is knowledge and power on his part to cure disease with precision and certainty, when such results are fairly within the bounds of possibility.

The astonishing discoveries which are made in chemistry and the allied sciences—the way in which brain is exploring almost every region of the known world—are matters to compel the veterinary surgeon especially into greater activity—compel him to strive after the possible in the art of healing, to the utmost limits of his power. The veterinary pupil cannot be too practical in the legitimate application of his powers, nor too scientific in his aims.

To commence, he should be thoroughly grounded in the common elements of ordinary education; this is necessary, not only to the veterinary pupil, but to all young men in every walk of industrial life. In addition to these common elements of knowledge, he should possess at least some knowledge of Latin and Greek; he will, during his career both as a pupil and as a practitioner, be called upon to speak and listen to a language out of the common routine of life. It is not necessary that he should be a classic; but he should possess a good rudimentary knowledge of medical language, and of the terms made use of by medical men.

A veterinary surgeon, to be thoroughly equal to the position desired, and successful in the career he ought to pursue, should be

industrious, temperate, and careful of the means at his command. He should possess a large fund of common-sense, and great firmness of purpose. He should be thoroughly truthful in all his business transactions—should have the unfettered use of his head and of his hands. He should be a good sound pathologist, anatomist, physiologist, and microscopist. He should thoroughly understand the art of shoeing horses, and the principles upon which the art is based. He should be unceasing in the observation and registration of facts relating to disease. He should know the true relation which exists between the disease he may cure and the means available for cure; and, above all, he should be prompt and decisive in their application. He should rigidly cultivate his powers of observation, especially in what relates to causation. He should possess a retentive memory, and a wide faculty of analogy. He should be able to handle horses and cows fearlessly and effectually, and be dexterous and cool in the performance of all surgical operations necessary to be done upon them. He should be able to perform the most common duties necessary to be done to a horse or a cow, with the same readiness and facility that an expert groom, a common stable-helper, or a cowbouger can do them. He should be quiet and respectful in his manner, and discreet with his tongue. He should be able to live coarsely, to dress plainly, to endure great fatigue, and to sleep upon a hard bed.

Such are the elements of which the man should be constituted—such is the structure and build of what ought to be your finished veterinarian. And the question naturally arises, how are we to obtain him? Suppose the mental and physical forces of the youth to be right and well balanced, the answer is—by proper training and culture.

The business of the pupil during the period of his apprenticeship is to become thoroughly familiar with the tools of the profession; and the knowledge which he seeks is practical knowledge, and should in all cases be accurate and precise. Knowledge of a loose vague character is at [all times to be reprobated; and yet the majority of veterinary pupils rarely possess knowledge that is accurate. They are seldom more than quarter educated to commence with, and in numerous instances they have been apprenticed to the profession because of their erratic tendencies, or because when mere children they manifested a strong vagabond-like propensity to ride and drive horses; and the great idea they have of the use and function of a veterinary surgeon is this, viz., to mount a horse and to ride about the country giving orders. The pupil should make himself familiar with drugs and chemicals, their natural history, common physical characters, peculiar qualities, properties, doses, and uses. He should also understand how to prepare, compound, and administer them. From a very early period of his apprenticeship he should keep an "index rerum," in which he should note facts of importance relating to his profession; he should also keep a copious record of all cases of disease of importance, together with a clear statement of the remedial measures resorted to, and the results arrived at.

Two years of his time should be devoted to the shoeing-forge and to the stable—the forge, in learning to pare out the feet of horses, and to nail on the shoes with readiness and facility; the stable, where he may become conversant with the habits of horses, how to feed them with judgment, and by grooming, how to handle them with familiarity and confidence. He should obtain a rough general knowledge of the anatomy and physiology of the horse and the cow. He should learn the names of the bones, their relations, and the number and variety of joints which they should form with one another. He should also be ambitious to possess a small microscope and a few chemicals, and by working diligently with them during his spare hours he will gradually acquire a fund of information invaluable to him in after-life.

Such are the principal features which in my opinion should constitute the ground labours of the youth during the years of his pupilage; few, however, I am sorry to say, will so school themselves. Great numbers waste their spare but golden hours lounging with idle grooms, or in smoking, or in mischief making, or in planning barbarous practical jokes, during which time they appear to be under the firm conviction that everything which they require to know they will somehow or other learn at college; the consequence is that many young men enter college in a pitiable state of ignorance; and the consequence is they either leave the place in disgust to themselves, and bitter disappointment to their friends, or if they manage to obtain a diploma, years of malpractice and consequent suffering and destruction to valuable live stock result to those who employ them.

An erroneous belief prevails to the effect that our veterinary colleges are to teach young men a full and complete knowledge of the veterinary art; this belief is wrong in every essential. Our colleges are not to teach any such thing; their use and purpose is to teach *those laws and scientific principles upon which our art, strictly speaking, is* BASED. Art, I have said, precedes science; but science appears and gives sound theory to art—gives laws and principles by which we learn the *why* and the *wherefore* of art. You do not send a youth to the University of London or Cambridge to learn the alphabet or to write or the common rules of arithmetic; he is expected to know not only these essentials but numbers of others. He goes to a university for a widely different purpose; so should veterinary pupils go to a veterinary college. They should be expert practitioners before they enter the portals of such an edifice; and, in addition, they should possess a sound general rudimentary knowledge of principles. A mere diploma is valueless; it is the knowledge and experience which a diploma should symbolise in which its value consists; and if he who owns a diploma lacks the knowledge and experience it sets forth, the owner is simply a pretender and an impostor.

It is only by labour ennobled by self-sacrifice—"by sweat of the heart and sweat of the brow"—that character and position are to be obtained and maintained in the world. If a youth be habitually idle the facul-

ties of his mind will run to seed, and his energies will become palsied; he cannot be taught too early the high value and purpose of human life. The purpose of a man is not to sneak and dodge through the world like a thief; but to look with a clear eye to the future, and to do battle with the difficulties which beset his path, or which may pertain to the sphere in which he moves.—"A cultivated man, wise to know and bold to perform, is the end to which nature works." * The youth is the future man, and he should know that the work he does to-day is necessary to prepare him for the work of to-morrow. "A man's nature," says Lord Bacon, "runs either to herbs or weeds; therefore, let him seasonably water the one and destroy the other."

(*To be continued.*)

YORKSHIRE VETERINAY MEDICAL SOCIETY.

OFFICIAL REPORT.

The third annual meeting of this Society was held at the Queen's Hotel, Leeds, on Friday, 19th January, 1866, at 2 p.m., the President, Mr. M'Taggart, in the chair. There were also present—Colonel Fitzwygram, 15th Hussars; Messrs. Haycock, P.L.V.M.A.; George Morgan, Hon. Secretary, Liverpool V.M.A.; E. C. Dray, Leeds; C. Secher, Knaresborough; W. Broughton, Leeds; J. Cuthbert, Leeds; J. Freeman, senior, and Freeman, junior, Hull; J. Freeman, Keyingham; — Patterson, Dewsbury; J. W. Anderton, Skipton; T. Greaves, Manchester; T. Horne, Barnsley; — Bale, Ottley; J. S. Carter, Bradford; W. Taylor, Wetherby; — Horrell, Rochdale; A. Edmondson, Harmby; S. F. Fallding, Wakefield; — Pratt, Masham, and the Secretary.

At the conclusion of the preliminary business the President delivered the following inaugural address:

Messrs. Vice-Presidents and Gentlemen,—It would ill become me to waste your time, or inflict upon your patience an unnecessary penance, by introducing a formal inaugural address of an hour's reading. The history of our profession, its sweets and bitters, have been so ably animadverted upon, not only by our excellent President, Mr. Dray, but also by the presidents of the Manchester, Liverpool, and other veterinary medical societies, that if I were to attempt a lengthened panegyric I could only present the same features in a new guise.

At present I feel as if we were rather under a cloud, by having an enemy to contend with of so formidable a character, an enemy of such gigantic dimensions, that it somewhat puts our calculating faculties "hors de combat." I allude to the rinderpest or cattle

* Emerson's 'Conduct of Life.'

plague. To the present generation of veterinary surgeons the disease is a stranger, yet with a stranger we in time get familiar. We obtain an insight to his qualifications, and are enabled to judge of him in his various characteristics. So with this formidable opponent, I believe we may safely say that his dimensions are getting measured by our profession, and that we shall be able, in some measure, to cope with him. Our difficulties of access have been rendered more difficult by the would-be-wise non-professionals, who so lavishly volunteer their nostrums through the medium of the press. It is natural enough for a drowning man to grasp at a straw, and for people whose money is at stake in the form of domestic animals which have been attacked with a deadly malady to try such remedies as are recommended. Yet it is a great drawback to the profession, inasmuch as it deprives the scientific explorer of disease of having an opportunity of experimenting. I have no doubt most of you have felt this difficulty. If we congratulate ourselves upon getting a client who will administer our medicines according to our directions, and flatter ourselves that at all events we have an opportunity of giving certain medicines a fair trial, on our next visit we find our directions have been totally disregarded, and some other treatment substituted. Such are the drawbacks country practitioners have to contend with. Anxious for the public good, zealous in fathoming the disease and testing the powers of medicine, the veterinary surgeon is thwarted and sickened. We as a veterinary body may well clothe ourselves in sackcloth, and cover our tiny heads with ashes, and prostrate ourselves to the ground, when we hear such humiliating sentences from such a man as Mr. Peacock, M.P., at a conservative dinner, at Malden, in Essex, viz., that "that science (*i. e.* veterinary) is the most retrograde of any in the kingdom." One would imagine, in charity towards that gentleman, that he was not well versed in Holy Writ or in natural science. Are we not told that, in the last chapter of the second book of Samuel, a pestilence in the time of David is mentioned which smote seventy thousand men. In the 'Iliad' of Homer the pestilence which raged in the army before Troy is poetically attributed to the arrows of Apollo, Apollo being the sun, and the rays of the sun lured from the swamp deadly fever and plague. Does this said Mr. Peacock suppose that veterinary surgeons can control the physical laws of the universe; that they can say to the winds "Be still," and to the clouds "Condense, and send rain upon the earth;" to the sun, "Veil your smiling fiery face, and let us enjoy the cool autumn breeze, which gives tone and energy to the bodily powers"? If veterinary surgeons were endowed with such powers, then might it not be in the power of Mr. Peacock to taunt veterinary science with being retrograde.

When cholera showed itself in this country as a plague, was the medical profession fit successfully to cope with it? Thousands of our species sank at the presence of the invading monster, and few were wrested from his grasp or saved from his despotic sway. Medicine was ineffective, and the labours of the physician in vain.

Hitherto, it must be confessed, medicine has done little good in the treatment of the cattle plague. The anxiety and the untiring energies of the veterinary profession are, nevertheless, unabated in wrestling with this dire scourge that has so effectually taken possession of our ruminants. When strongly oppressed with grief and care, and heart-sick at the loss of his employers (who with unrepining magnanimity meet their losses), the veterinary surgeon is constrained to admit that some organic and physical laws are in operation to which as yet he is a stranger.

As to whether the cattle plague is imported or of spontaneous generation, makes little difference as far as treatment is concerned, yet it is a question of considerable importance. Considering that it is imported, and of a highly contagious nature, the Government has acted wisely and with promptitude in its orders from the Privy Council to stop fairs, markets, &c., in order to arrest its spreading. Yet it is evident that the disease shows itself in isolated districts, where no trace of communication can be discovered.

If the atmosphere is pregnant with a poison detrimental to animal life, it is a source of gratification that the bovine lower animals should be the medium of absorption, instead of man and his race, in the shape of cholera or something worse. It is worthy of notice that while this cattle-plague disease is at high-fever pitch, man and horses were seldom more healthy than they have been the last four months.

It is well known to you all through the medium of the public press that homœopathic treatment has been recommended in the treatment of the cattle plague, and that the per-centage of deaths are less from that treatment than by that of allopathy. I will not presume to say whether it is so or not, but I will venture an opinion that if there is the slightest truth in the statement there is not a member of our profession that would not avail himself of every opportunity of being indoctrinated into the secret. The experiments which have been made by ardent homœopathists, though not as successful as could be wished, should not be scouted or sneered at, remembering that allopathic treatment has not superseded it. All feeling of opposition may be fairly laid aside, and we feel it a duty incumbent upon us to try every means in our power to stop the current of this mighty stream of devastation, and thus endeavour to uphold the character of our profession.

(*To be continued.*)

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

The usual quarterly meeting of the above Association was held in the Medical Institution on the evening of Friday, February 9th. Present:—Messrs. Lucas, Heyes, Proctor, Friend, Wilson, Brydon, Harwood, Leather, and Morgan, Liverpool; Mr. Haycock, Presi-

dent of the Lancashire Veterinary Medical Association; Mr. Thos. Greaves and Mr. P. Taylor, Manchester; Mr. Walley, West Derby; Mr. W. Little, Worsley. The President, Mr. Lucas, in the chair.

The minutes of last meeting being read and confirmed, Messrs. Whittle, Wood, Leather, and Storrar, were elected members of the Association.

Mr. G. Heyes was then unanimously elected Vice-President of the Association, in the place of Mr. John Ellis, resigned.

The President then called the attention of the meeting to the proposed new Veterinary Bill, stating that he had received a circular from Mr. Coates, requesting his opinion on the Bill. He had deferred replying till now, in order that he might be able to learn the opinions of gentlemen present; and he thought that the opinions of the various veterinary medical associations throughout the country ought to bear a certain weight in the deliberations of the Council of the Royal College of Veterinary Surgeons, and would materially tend, if freely given, to mould any future legislative or other measures into such a form as to meet the views of all parties, and help to establish professional unity.

The various clauses of the Bill having been read by the Secretary, an animated discussion of the measure followed, which terminated in the unanimous adoption of the following resolution, proposed by *Mr. P. Taylor*, and seconded by *Mr. Whittle:*

"That it is the opinion of this meeting that the Bill, as at present proposed, should be reconsidered and amended before presentation to Parliament."

Mr. Walley, West Derby, then read the following elaborate essay on "Cancer in the Domestic Animals."

Mr. President and Gentlemen,—In presenting this essay to your notice this evening, I hope it will not be thought that I have been actuated by a spirit of egotism. Many of you know (others do not) the circumstances under which I have written it. Being such a young member of the Association, and a new beginner in the neighbourhood, I think it would have been better had some one more acquainted with you undertaken the task. I was asked at the last meeting to write an essay. I then promised that I would do so if no one else volunteered one before the half of the time had expired for the next meeting. As such a volunteer has not been forthcoming I have fulfilled my promise.

The subject which I have chosen for this evening's discussion is Cancer, and I have done so, not because I wished to forestall our friend Mr. Haycock from furnishing us a paper on the disease of canker in the foot of the horse (for this I shall leave comparatively untouched, only so far as it imperatively demands notice under the title of my essay), but because cancerous diseases in our domesticated animals have been very little written upon or thought about; and though I may not be able to give you much information on the subject (as my experience in these affections has been but limited),

I hope that by the discussion which will necessarily follow we shall all derive some benefit.

"He who does his best does all,
No man can do more."

CANCER OR CARCINOMA.

The term cancer was originally derived from the Latin *cancer*, a crab, from its fancied resemblance in the breast of the human subject (owing to the varicosity of the vein surrounding it) to that animal, and from the Greek *carcinoma*.

Although to the ancients these terms were somewhat ambiguous in their meaning, to the moderns (since the time of Home, Baillie, Key, and Abernethy) they have a more definite and settled applicability, especially by the aid of pathological anatomy. Up to the time of those justly celebrated men above mentioned a variety of morbid alterations of structure were included under the head of cancer, but since then the only recognised forms of this malady are scirrhous or carcinomatous, medullary, and cerebriform.

As veterinary surgeons, the former is the one we are called upon most frequently to treat; next in order the second, and then the latter. Melanotic formations are sometimes included under the head cancerous, but they now seem to be recognised as separate depositions, dependent upon a definite cause, although in their general characteristics they have some resemblance to cancer.

There are also a number of other formations much resembling scirrhus, as, for instance, the morbid productions due to the presence of entozoa in the body, such as aneurism of the mesenteric arteries; the deposition caused by the irritation of *Filaria bronchialis* in the lungs; the scirrhous transformation of the biliary ducts, produced by the liver fluke; and the cancerous-looking deposits in the integuments of the intestines produced by the strongyle. Several of these, in some of their stages, bear some analogy to cancerous growths; and it is a question in my mind whether it will not ultimately prove that some minute form or species of entozoic life have not more to do with these formations than has hitherto been suspected; and I am led to this conclusion from the cancerous or so-called canker productions in vegetable life, as in the canker of fruit trees, the formation of oak-balls, and the excrescences on the willow and other leaves, and other vegetable productions. All know the thousands of microscopical animal life existing in the skin of the human subject, and how soon the body becomes consumed by worms after death, without any possible ingress of a parent worm to deposit its ovum; and who can say but that, under some altered condition in certain parts of the body, these small worms do not suddenly spring into active life, and produce the awful destruction of tissue we sometimes witness?

The definition of cancer is somewhat difficult, as it scarcely admits of a precise one. According to the general ideas of the

mass, it is something which corrodes, destroys, or eats away; as, for instance, in poetry, "the cankering care of the heart" is frequently spoken of.

Cancer may be said to consist of the formation or deposition of a peculiar substance, which presents great variety of form, consistence, and colour; frequently assuming a definite arrangement and vascular organization of its own, it presents at first the appearance of a tumour (usually single, and not surrounded by a cyst); a limited local hardness; cold, pale in colour, and insensible to pain, indicating a low degree of vitality of the part, owing to its deficiency of red blood-vessels and consequently lowness of organization. After a time the mass begins to alter in composition, softens, and passes into a state of unhealthy suppuration and ulceration, the skin over the part ulcerating, and giving exit to a fetid ichorous discharge.

Cancer, then, consists of two stages, viz., the occult or scirrhous, and the carcinomatous or cancerous stage.

(*To be continued.*)

THE WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Athenæum, Bristol, on Thursday, January 18th, 1866.

Owing to engagements, in reference to the prevailing cattle plague, several of the members absented themselves.

W. Raddall, Esq., occupied the chair as the President of the Association, and S. D. Broad the vice-chair, as one of the Vice-Presidents.

Besides those, Messrs. T. D. Gregory, of Bideford; C. W. Gregory, of Bristol; T. Barrell, of Keynsham, C. J. Dring, J. E. Cornelius, and Dr. E. O. Spooner, were present.

Mr. Bodington, one of the Vice-Presidents of the Association, addressed a letter to the Secretary, expressing the regret he felt in not being able to leave home, owing to his numerous engagements, as Inspector of Cattle at Cardiff. This will explain the absence of the Secretary also; his engagements in the district of Teignbridge prevented his being at his post. Fortunately he obtained the assistance of Mr. C. W. Gregory, of Bristol, who kindly actedas Hon. Sec. *pro tem.*

The minutes of the last meeting were read and confirmed.

Mr. C. W. Gregory was proposed by *Mr. Broad*, and seconded by the *President*, as a member of the Association, and unanimously accepted.

Mr. C. J. Dring was also proposed as member of the Association by *Mr. Broad*, and seconded by *Mr. Barrell*, and unanimously accepted.

Mr. T. D. Gregory proposed that the opinion of the meeting

should be expressed on the *fourth* clause of the Veterinary Medical Bill, about to be introduced to Parliament; which proposition being agreed to, he (Mr. Gregory) observed that the members of the Association should clearly understand the prospects before them for the next seventy or eighty years in their relation to *non*-members, and also the public generally, should the proposed Bill come into force. They would, he said, be in a similar position to that in which they now stand, with this difference, that they would lose the chance of afterwards redeeming it; and the proposed Bill, as a protective measure to veterinary surgeons, would be abortive. He begged members of the profession to pause before again committing themselves, and seriously to consider what real benefit they will obtain. The following resolution was proposed by Mr. Gregory:—"That the members of the West of England Veterinary Association, now assembled, though fully impressed with the importance of a 'Bill' being introduced into Parliament for the better regulation and protection of the veterinary profession, view with considerable alarm and distrust the *fourth* clause of the Bill proposed by the Council of the Royal College of Veterinary Surgeons; and believe, should the said Bill, as it now stands, become law, that it will have a most injurious effect upon the status and interests of the present and next generation of veterinary surgeons."

Mr. Broad made some observations which were somewhat opposed to the resolution.

Dr. Spooner spoke in favour of it; he said—Prove to the public still further the necessity of having more scientific men, and prepare the minds of the legislators to appreciate your wants, and also prove to them that you are determined to satisfy the public wants. Let there be preliminary examinations instituted, and send out better educated and still more scientific men, and wait until you can get a good and effective Bill.

After an animated discussion the proposition was seconded by *Mr. Dring* and carried.

The following resolution was then proposed, duly seconded, and carried unanimously:

"That the first resolution be forwarded by the Secretary of this Association to the Council of the Royal College of Veterinary Surgeons, requesting them to take into consideration the advisability of omitting the *fourth* clause of the said proposed Medical Bill altogether, or adding to it the following or some such words:—'Provided any such person or persons shall present himself or themselves before the examining board of the said Royal College of Veterinary Surgeons, and undergo such a *practical* examination as shall by them be deemed satisfactory; and by the payment of any sum, not exceeding *ten pounds*, any such person shall be admitted a member of the said College, and be entitled to all the rights and privileges of the said profession.'"

A letter was read from Mr. Greaves, of Manchester, in reference to a movement about to take place with regard to the "Defence Society." Mr. Greaves stated his intention of moving "That this

Society is of opinion that the degree of usefulness and influence of the Mutual Veterinary Defence Society will be entirely dependent upon its being a united and strong body; that its strength and importance can only be ensured by the co-operation of the various veterinary medical associations. For this object this Society cordially joins the Liverpool and Lancashire Veterinary Medical Associations, and other members of the profession generally."

The President proposed that "This Association fully concur in Mr. Greaves' views, and it also expresses its sense of the importance of co-operation, and would be very pleased to join the above-named societies." This was agreed to unanimously.

Mr. T. D. Gregory was then called upon to read his paper on "Rinderpest."

GENTLEMEN,—I promised at our last quarterly meeting, held at Exeter, that I would to-day introduce for your consideration and discussion the subject of the rinderpest, provided the interest in the same had not died out. I stand here to redeem my pledge; for I need not say that, instead of professional or public interest dying out, it has gone on increasing as the disease has increased, and this from time to time, from day to day, until it has assumed such gigantic proportions as to have become really a great national calamity. But perhaps it is not so much our duty to consider the effect its ravages might have upon the public weal, as to treat it in a manner that concerns us in a professional point of view. It behoves us to attempt by every possible means to thoroughly ventilate it, and come to a right and proper estimate and knowledge of its history, its nature, and its pathology, inasmuch as a great outcry has been raised throughout the country, among all classes of the community, and urged in a manner, I need not say how unjustly, by the public press (most especially by the *Times*), upon the inefficiency of the knowledge possessed by the veterinary profession. We have been reviled, insulted, degraded, and held up to derision, because we are not in the possession of a remedy—because we have not pandered to the public taste for a specific for this pestilence—because we have been bold enough to say that there is no "royal road" to the treatment of this disease; we have had to fight against the prejudices and the pet but erroneous theories of this mighty organ of public opinion. But it is most consolatory, most satisfactory, to us to feel that the *Times* is now contradicting itself, and by its recantation attempting to undo a portion of the great mischief it has caused, and to acknowledge its growing want of faith in the quackeries it for so long a time encouraged and propagated through its columns. I believe that the veterinary profession has elevated itself by its firmness and consistency to a position never before attained by it in this country; and the light of science must eventually cast into the shade the hosts of quacks which have appeared from time to time upon this stage. They have sprung up from every quarter, to offer, not only suggestions, but to demand and insist upon their remedies being the only true ones, and their measures the only ones whereby the disease could be extirpated. The medical profession, likewise, has not been behindhand in this warfare against us, its members having accused us of being unequal to this emergency. Gentlemen, far be it from me to say one word to call forth any bitterness of feeling towards a profession that is so truly elevated and honorable, and to which we owe so much; but I cannot help saying they might have been more charitable and less censorious. They must and do know the difficulties that lie in our way. They must feel that

they have not yet attained perfection in their art. They must be aware that *they* have not, nor never will, discover a successful mode of treating the class of diseases to which the one we are now discussing belongs. One of their greatest authorities, Dr. Watson, the President of the College of Physicians, says, "If the balance could be fairly struck, and the exact truth ascertained, I question whether we should find that the aggregate mortality of cholera in this country was in any way disturbed by our craft." If this be true of cholera, I would ask, is it not the same with respect to other diseases? Have they, by their treatment, lessened the mortality of phthisis, hydrophobia, yellow fever, and a host of others? It is too true we are not so highly educated, as a profession; but the fault does not lie with us, the cause must be looked for deeper than the surface. Nor can I compliment medical men upon the suggestions they have many of them offered for the treatment of this disease. They have been the most absurd imaginable, evidently showing their total ignorance of its nature and the effects of medicinal substances upon the ruminant. I am convinced you will pardon me, even if *they* do not, for travelling somewhat out of the path to vindicate the veterinary profession from what we must all know to be a series of unjust and uncalled-for attacks. I have taken upon myself to do the same at all public meetings wherever and whenever opportunities have offered, and they have not been few.

Gentlemen, it would be a somewhat fruitless task to recapitulate all the acts of the Government of this country for the suppression of the plague by Orders in Council, &c., for they must be familiar to you all. These orders have been tardily and begrudgingly issued; they have been almost wrung from the Government as greater and greater became the necessity, until they culminated in the orders of the 23rd of November and the 16th of December, recommending the suspension of all traffic in cattle throughout the country, thus evidencing most clearly the recognition *at last* of the recommendations of Professors Simonds, Gamgee, and others of the veterinary profession. Had these orders been issued and properly carried into effect five months ago, I do not hesitate to say, the cattle plague by this time would have become a thing of the past. Professor Bouley, the veterinary commissioner sent here by the French Government as far back as last August, was quite right when he said "The cattle of England would be sacrificed to the principle of non-interference with the operations of trade." Sad experience has shown the correctness of his views.

There is one other act of the Government of this country upon which we must, as a profession, feel strongly. They appointed, as you are all aware, a commission to investigate this matter; and out of some twelve or fourteen members composing it one only was a member of the veterinary profession. I have ever looked upon this as a neglect and an insult. But, gentlemen, it is so far satisfactory to us to know that all the deliberations of this commission were nothing but confirmatory of the views which had been before advanced by us.

With these few prefatory remarks, we will pass on, with your permission, to the consideration of the more important division of our subject. I fear, however, as we proceed, you will find that I have little *new* matter to lay before you, acquainted as you all must be with every particular connected with the subject.

(*To be continued.*)

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Sparrow, S., Cambridge
Wallis, Page, Cambridge

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altringham
Lewis, Walter, Crewe
Taylor, John Boardmau, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria
Reynolds, Richard L., Alfreton

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Banister, Albert E., Bridport
Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Dudgeon, David, Sunderland
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Plews, Thomas, Stocton
Thompson, Thomas, Sunderland

ESSEX.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, Woodford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

GLOUCESTERSHIRE.

Barling, Frederick Wm., Newnham
Hobbs, Henry, Newnham
Paradise, John, Dursley
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

HAMPSHIRE.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gates, Robert, Andover
Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

HEREFORDSHIRE.

Barling, J. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Proctor, Harrison, Hertford
Rushall, Alfred, Bishop's Stortford
Webb, Thomas G., Bishop's Stortford
Wilson, William, Berkhampstead

HUNTINGDONSHIRE

Dickens, Charles, Kimbolton
Fordham, Thomas B., Godmanchester
Garner, Brand, St. Ives
Waters, George, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, William, Margate
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Frederick Richard, Lewisham
Martin, John Bean, Rochester
Morgan, Charles, Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, F. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Bridge, Roger, Bury
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, W. I., Worsley, Manchester
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Howell, James, Middleton
Hutchinson, —, Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawson, John, Manchester
Lawson, John, jun., ditto
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Polding, P. Oswald, Bury
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Taylor, Thomas, Manchester
Twist, Charles, Woolton
Welsby, Joseph, Prescot

LEICESTERSHIRE.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston

LANCASHIRE (*continued*).

Clarke, Thomas Allen, Horncastle
Cutting, Henry, Market-Raisen
McHugh, John T., Brigg
Santy, Arthur Henry, Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Hirst, Charles Samuel, Barnet
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H. Harleston
Carter, Charles N., Swaffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Branford, Wm. Catton, Oundle
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Stephenson, Clement, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Wilson, R. S., Ollaston

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jones, James B., Ludlow
Leigh, Nathaniel, Bristol
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton
Walters, Robert G., Newport

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Gregory, C. N., Bristol
Hutchings, William, Kimpton
Leigh, Nathaniel, Bristol
Stauffer, J., Wedmare

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Checkett, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Harry D., Wolverhamton
Robinson, William, Tamworth

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russell Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes and Lowe, John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough

SUSSEX.

Crofts, Henry, Arundell
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Walker, Alfred, Rugby
Watson, Walter, Rugby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Bibby, James, Calne
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, Robert Tutnall, Bromsgrove
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, John Wilkinson, Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Bourdass, George, Bridlington
Broughton, William, Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, ditto
Cooper, Job, Market Weighton, Brough
Cuthbert, John, Leeds
Dray, Edward C., ditto
Edmundson, W., Hornby
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Secker, Thomas, Ripon
Stephenson, Mrs., Pickering
Thunton, James, Easingwold

WALES.

Bodington, George, Canton, Cardiff
Kennedy, Thomas, Wrexham
White, Thomas, Rhyd-y-Glaves, Carwen.

SCOTLAND.

ABERDEENSHIRE.

Snowball, Matthew C., Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

FORFARSHIRE.

Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso

PRESENTATION OF A TESTIMONIAL TO PROFESSOR TUSON.

We have much pleasure in announcing that, on the 28th instant, the eve of the publication of our present number, the pupils of the Royal Veterinary College will assemble in the theatre of the institution, for the purpose of presenting a suitable testimonial to Professor Tuson. In our next we hope to give a report of this interesting meeting.

OBITUARY.

With sincere regret we record the death of Professor Brande. He had attained the great age of 81, and died full of honours. He was born in 1786, and was grandson of a physician who came from Hanover with George III, and was that king's physician. After an education at Westminster he was sent to Hanover, but in 1803, on the panic of Bonaparte's invasion, he returned home and entered St. George's Hospital, attending the lectures and the dissecting rooms, and communicating several papers to *Nicholson's Journal,* notably one on guaiacum, which was read before the Royal Society. In 1808 he examined the calculi at the Hunterian Museum, and lectured on chemistry at Dr. Hooper's in Cork Street. Then he became connected with the new medical school in Windmill Street, and fairly embarked as a teacher and demonstrator of chemistry. In 1809 he became F.R.S., received the Copley Medal in 1813, and from 1813 to 1826 was Dr. Wollaston's successor as senior secretary to the society. In 1812 he became a Professor of Chemistry and Materia Medica to the Apothecaries' Company, and in 1851 was elected Master. In 1813, on Sir H. Davy's recommendation, he was appointed Professor of Chemistry at the Royal Institution, and delivered lectures for many years in conjunction with Mr. Faraday, who was also associated with him as editor of the *Quarterly Journal of Science* for many years. In 1825 he was appointed superintendent of the die department of the Mint; in 1836 Fellow, and in 1846 Examiner of the London University. Besides Professor Brande's famous 'Manual of Chemistry,' which has been translated into many foreign languages, he was author of 'Outlines of Geology,' 'Dictionary of Science and Art,' &c. In 1853 he received the honorary degree of D.C.L. from Oxford University.—*Pall-mall Gazette.*

When last we met him at the Board of Examiners of the Royal College of Veterinary Surgeons there were no indications whatever of any loss of mental or physical energy. He manifested his wonted thoughtful earnestness in the position he held in connection with veterinary medicine.

Professor Brande was elected one of the Members of the Court of Examiners of the Royal College of Veterinary Surgeons in 1845, contemporary with him being Messrs. Liston, Bransby Cooper, Babbington, and Solly. He was unanimously elected President of the Board of Examiners, December 17th, 1851, which office he held much to the satisfaction of all with whom he was associated up to the time of his death.

Thus, the great river of life bears us all onward in its resistless torrent. We part company with those with whom we have floated side by side for many a year, but their voyage has ended before our own, and we have yet to contend with the force and eddies of the tide. Thus, there is nothing earthly that does not suffer change. We tremble at the thought of the grave,

> "Its long extended realms and rueful wastes,
> Where nought but silence reigns, and night, dark night;"

but there's a brighter and better world beyond it.

Died at Uppingham, on the 21st of January, Mr. George Freer, M.R.C.V.S., aged 46. His diploma bears date May 8th, 1844.

ERRATA IN NO. 458.

Page 77, line 19 from the top, leave out "was." Same page, line 24, *read* "particles" *for* "patches."

THE

VETERINARIAN.

VOL. XXXIX. No. 460. APRIL, 1866. Fourth Series. No. 136.

Communications and Cases.

CATTLE PLAGUE IN SHEEP.

When the cattle plague first began its devastations among our herds, and cast a shadow that has since darkened many a bright future, the alarm that arose was tempered with the conviction that the evil, at the worst, was confined to the cattle in the country. The gloomiest imagination hardly contemplated, among the possibilities of the case, the extension of the disease to other animals.

Reports were current in other countries, of the occurrence of "plague" among sheep, goats, and even deer, but without absolutely doubting these stories from foreign lands, we received them as matters of historical interest, having no practical bearing upon our own time. By-and-bye came another rumour from afar, that horses also were victims to rinderpest, but the news, after exciting a spasm of alarm, hardly obtained the compliment of a denial, and we fell back upon our old feeling of security. "Cattle plague, et preterea nihil," was our motto; and acting upon the principle all animals, save the bovine race, were treated as though they bore a charm against the pestilence. For the firm belief in the immunity enjoyed by sheep and other stock, there were good reasons. It is known to be a fact in science, that virulent diseases originating in one class of animals are not, generally, transmitted to another class. Instance glanders in the horse, and variola in sheep. Again, sheep, in certain cases, seemed to resist the infection after being in contact

with diseased cattle, or at least the plague did not immediately spread among them, as it would have done among the members of a herd; and hence, the negative evidence being accepted as positive proof, the conviction that had all along been entertained grew to absolute certainty.

Early in August last our feeling of security was assailed in a manner that made it doubtful if we had not been indulging in an illusory hope rather than maintaining a rational belief. A report reached us from a non-professional man that a goat under his care was the subject of a peculiar disease, and appeared to him to resemble "a cow with the plague." The animal had been purchased a fortnight since by a gentleman, in order to supply his children with milk; after yielding a liberal quantity for some eight or ten days it was noticed to be unwell, and the secretion of milk soon entirely ceased.

The goat was removed to the Veterinary College, and carefully watched up to the time of its death, which occurred in a few days. An examination was made, and the morbid appearances corresponded so closely with those observed in cattle that have died of plague that no doubt could be entertained as to the similarity of the two diseases.

Soon after the occurrence of this incident, an outbreak of disease was reported among some sheep in Norfolk, and an investigation was ordered, the result of which was the establishment of the fact, that the sheep were suffering from a malady identical with cattle plague, the symptoms and *post-mortem* appearances being as closely allied as they could possibly be in two distinct genera. Against the conclusion to which the evidence tended, every possible objection was urged by practical agriculturists, who seemed disposed to view the attempt to convince them of their danger as a proceeding inimical to their interests; mean while, successive outbreaks have occurred in different parts of the country, and at present there are at least twelve counties in England, and two or three in Scotland, in which cattle plague has attacked sheep and destroyed considerable numbers. Twenty-six flocks have been infected, and in nearly every case there has been no difficulty in tracing direct communication with diseased cattle.

The fact that sheep are the subjects of cattle plague is as absolutely proved as any fact in science; nevertheless, we shall proceed to discuss the matter as though it were still open to question.

It will be conceded that a positive result is superior to a whole series of negative ones; hence, if it can be shown that

by exposure to infection, or by inoculation, cattle plague may be transmitted to the sheep, a certain extent of susceptibility is at once established, and no amount of merely negative evidence will disprove the fact.

In order to decide the question of susceptibility on the part of the sheep to take the disease, experiments were performed at the Royal Veterinary College. Sheep were inoculated with the virus of "rinderpest," and, after six to eight days, symptoms of the affection were apparent. The animals died, and the *post-mortem* appearances were confirmatory of the fact that cattle plague existed. Cattle were inoculated with virus from the infected sheep, and, after the ordinary period of incubation, gave evidence of the existence of plague, and, after death, presented the same morbid phenomena. That sheep could become the subjects of cattle plague from inoculation with rinderpest matter was thus definitely proved. In another experiment sheep were placed in a box from whence a rinderpest cow had been removed, and the result was that the animals took the disease; proving that exposure to the infection might be followed by the development of the disease.

In several parts of the country there have occurred outbreaks of plague among cattle, from the introduction of sheep suffering from the disease, and numerous instances are also on record of sheep being infected from contact with diseased cattle. On the contrary, it may be urged, with truth, that sheep have in many places been exposed to infection and have not suffered; but the most that can be drawn from this fact is, that sheep are less susceptible to the influence of infection than cattle. In fact, so irresistible is the evidence that has been obtained from various sources, that even in spite of our previous convictions, and, in some degree, in contravention of our expressed opinions, we have been forced to admit the truth—that our flocks are in danger, and unless all precautions are adopted, with a view to keep them as far as possible from infected localities, we fear, notwithstanding their less degree of susceptibility, that our sheep may suffer enough to add sensibly to the weight of the calamity which at present afflicts the agricultural interests.

GLEANINGS FROM THE PROCEEDINGS OF THE BRITISH PHARMACEUTICAL CONFERENCE.

By Professor Tuson, Royal Veterinary College.

(*Continued from p.* 13.)

Potentilla tormentilla.—Potentilla sylvestris, or common tormentil, is a sub-species of *potentilla tormentilla*, belonging to the natural order Rosaceæ. It is commonly met with in Great Britain and other parts of Europe, and is found on heaths, commons, open woods, and dry hilly or gravelly pastures. It blossoms during the summer and autumn, producing yellow flowers. Some have asserted that in pastures where tormentil grows sheep are not attacked with the rot; argue that it is therefore a prophylactic to this disease, and suggest that it is desirable to cultivate the plant in damp pastures where rot is prevalent among flocks. Although no part of the plant, or any preparation made from it, is at the present time officinal, the root is employed as a domestic remedy for the human patient, and is used extensively by some veterinarians. The therapeutic value of tormentil root depends upon its containing from 17 to 18 per cent. of tannic acid, and upon its acting as an astringent and febrifuge without exercising any stimulant effect. Dr. Macnamara states that although the powdered root may be employed as a medicinal agent, it is preferable to administer it in the form of decoction. The same authority observes that his friend Dr. J. Leech has found the decoction of great service in ulcerations of the rectum.

Mr. John Adams, in a paper communicated to the Pharmaceutical Conference, remarks that tormentil root "was much esteemed by most of the older writers on botany and materia medica, who pronounce it an excellent medicine, not only in cases of diarrhœa, but also dysentery and hæmoptysis; and it is still used in some districts with very good effect by people who make tea (infusion) of it. The tincture is used with success in diarrhœa mixtures. Its use, however, in modern pharmacy has been very limited, one preparation only having been ordered in the pharmacopœias up to the time of the British Pharmacopœia, from which it is altogether excluded.

I am of opinion that in the next edition of the British Pharmacopœia it would be useful to retain the decoction as heretofore, and also to add two more preparations of it, the

"infusion" and the "tincture," prepared according to the following formula:—

Infusion of Tormentil.

Take of

Tormentil root, 1½ ozs.,
Boiling water, 1 pint.

Macerate for two hours in a vessel lightly covered, and strain.

Tincture of Tormentil

Take of

Tormentil root, 4 ozs.,
Proof spirit, 2 pints.

Macerate for twenty-eight days, and filter.

Mr. Adams makes no allusion to the doses in which tormentil and its preparations may be given, but I believe it may be administered by the veterinary practitioner in the following quantities:—

	Horses and Cattle.	Calves.
Powdered root . .	ʒvj to ʒjss,	. . . ʒjss to ʒiij,
Infusion	Oss „ Oj,	. . . f ʒijss „ f ʒv,
Tincture	f ʒvij „ f ʒxv	. . . f ʒij „ f ʒiv.

Dr. Parkinson remarked at the conference that tormentil root was regarded with much favour in the north of England as an astringent remedy for cattle.

Pharmaceutical Applications of Glycerine.—Mr. F. Baden Benger communicated to the Conference a paper on this subject, in which, after briefly referring to the history and modes of preparing glycerine, he mentions that this substance is now chiefly and best manufactured by Tilghman's process as improved by Mr. George Wilson, of Price's Candle Company, Vauxhall.

Palm oil, a compound of palmitic, stearic, and oleic acids with glycerine, is decomposed by causing steam to act on it in a peculiarly and specially contrived apparatus for several hours at a temperature of from 500° to 600° F. The resulting mixture, on being distilled, yields the fatty acids above named, and an aqueous solution of glycerine. The latter is separated from the former and concentrated to the required strength (specific gravity 1·26 British Pharmacopœia) by evaporation, and purified by being distilled often as many as five or six times. Glycerine thus prepared is justly regarded as being superior to that manufactured by any other

means on account of its almost perfect freedom from every kind of impurity. At one time it was thought that glycerine might be substituted for cod-liver oil in the treatment of phthisis, but the correctness of such opinion has not been sufficiently substantiated by experience to warrant a continuance of its employment in this direction. In surgery glycerine is chiefly used as an external application to render the parts to which it is applied continuously moist and soft, and as an addition to lotions, to prevent their too rapid drying. In pharmacy it is employed to prevent the hardening of pill and ball masses, and more recently in the manufacture of *plasmas* and *glyceroles*—preparations introduced during the last few years into pharmaceutical chemistry, the nature of which will be understood by perusing the following extract from Mr. Benger's paper.

"It is in external remedies that the greatest field appears to be open for the introduction of this substance in pharmacy, and I shall first call attention to the compound of starch and glycerine known as "plasma." It had long been thought desirable to find a substitute for fatty matters in ointments not liable to become rancid, and in 1858 Mr. Schacht, of Clifton, read a paper before the Pharmaceutical Society, in which he proposed for that purpose a mixture of seventy grains of starch with one ounce of glycerine, heated together to a temperature of 240° Fahr. The product is a plastic mass, well suited in most respects for the purpose, but has been objected to from its tendency to absorb moisture, and become fluid by long exposure to the atmosphere. The inconvenience arising from this source, however, might be easily obviated by keeping the plasma in air-tight jars, and dispensing it when necessary in wide-mouthed bottles. Some pharmaceutists recommend that the plasma should be kept at 240° Fahr. for twenty minutes, but no advantage is likely to accrue from this, and unless great care be taken to regulate the temperature the compound will become coloured, and will always be found to have diminished in weight, a result not at all satisfactory to the operator.

"The presence of a little water is not detrimental; indeed, I believe it improves the condition of the product, as it will be found more plastic, and better suited for rubbing over the surface of the skin, even after it has been exposed to the air a few weeks, and thus absorbed more moisture.

"I do not think that plasma would be advantageously substituted for fats in oil ointments, but in those cases where there is a great tendency to rancidity; *e. g.* the ointments of carbonate and oxide of zinc, and of acetate of lead; also

where the active ingredient is soluble in glycerine, as in the ointments of iodide of potassium, aconitia, atropia, belladonna, veratria, and creasote of the British Pharmacopœia, the plasmas appear preferable to the analogous ointments; they likewise have the advantage of being easily removed from the skin without the aid of soap or friction. Those preparations in which glycerine alone is the basis have received the name of glyceroles. Many substances are more soluble in glycerine than in water or alcohol. When an aqueous or spirituous solution is applied to the skin, it rapidly becomes dry, and it seems reasonable to suppose that absorption would then be greatly retarded. Glycerine is free from this objection, and its peculiar power of penetrating the pores of the skin renders it the best menstruum for many substances. Dr. Richter, of Vienna, proposed, in 1857, a caustic application, composed of one part of iodine, two of iodide of potassium, and two of glycerine. I am surprised that this, in various states of dilution, has not been more frequently used instead of the tincture. Glycerine dissolves five grains of iodine to the ounce, without the addition of iodide of potassium. One ounce of glycerine dissolves fifteen grains of atropine, and seems to offer some advantages over solutions containing acids in combination with the alkaloid in ophthalmic surgery. The non-resinous vegetable extracts are soluble in glycerine—a solution of the alcoholic extract of calabar bean has lately been used with success."

Mr. Benger next refers to the use of glycerine as an excipient for internal remedies, from which we select for description a glycerole of carbonate of iron, which "may be made by dissolving separately, each in two ounces of glycerine, seventy-six grains of sulphate of iron, and about sixty grains of carbonate of potash, and mixing the solutions. The result will be a pale green solution of carbonate of iron, containing one grain in one fluid drachm, which will keep a considerable time without change. The carbonate of iron is thrown down as a flocculent precipitate on the addition of water."

(*To be continued.*)

WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

March 13*th*, 1866.

DEAR SIRS,—Will you kindly take notice that the next quarterly meeting of this association will be held at Clarke's Hotel, Taunton, on Thursday, 19th of April, at one o'clock, p.m., and that Mr. T. D. Broad, of Bath, has kindly undertaken to read a paper on "Seedy Toe?"

It is hoped members of the body corporate residing in the neighbourhood of Taunton will avail themselves of the opportunity of becoming members of this association. I have been not a little surprised, since residing in England, to find the vast amount of lukewarmness in members of our profession. I should very much like to know how many qualified men there are in England, in regular practice, and how many copies of your periodical are sold to them. It strikes me very forcibly there are many men who hold a good position in the profession as practitioners, and who are ignorant of what is passing amongst us, from the simple fact of their not subscribing to, or reading the *Veterinarian*. Does it seem possible, in the present "penny readings" day, there are to be found respectable members of a body, with the motto "Vis unita fortior" upon their diplomas, who tell you they "don't take the *Veterinarian*, because they don't take any interest in it?" I think, if there are such men to be found, it is degrading to the profession at large. One would imagine that, to keep pace with the times, it is necessary not only to be a regular subscriber to our common book, but to know what is going on in other scientific bodies. The *Lancet*, although exclusively a medical paper, affords the student of veterinary medicine much valuable information (and we are all students). The *Lancet* for the past week contains some observations by Dr. Brown-Séquard which will give to the veterinary surgeon some new ideas in the practice of medicine. Some persons cannot imagine what good there is in these associations! They say they have no time to attend the meetings, as the distances from their homes are great; "they can't see any good in 'em." I dare say those men who don't know what is going on in the profession (and none can know who read no book but their Bible) think it very strange that medical associations should have sprung up within the last few years. Such things were not dreamt of in their younger days, and why now? I would say to these members of the

profession that we, old, middle-aged, as well as young men, must (if we desire to keep with the times) not neglect our books. The test of a man's superiority, *in any walk of life*, is that he makes himself up in the literature of his own particular business or calling.

I do hope the senior members of the veterinary profession will ponder over these few hastily written lines, and make up their minds to unite themselves with their brethren when they have the opportunity. Depend upon it, there are strange times before us, looming, as it were, in the distance. Let us be up and doing, if we wish to keep our heads above water. Let every member of the profession look to the meaning of the words of our motto. It is not enough to look at the words without their meaning is thought of and acted upon.

I am, &c., yours,
R. H. Dyer,
Hon. Sec.

To the Editors of the 'Veterinarian.'

PARASITES IN THE KIDNEYS OF A MARE.

By R. G. Walters, M.R.C.V.S., Newport, Salop.

On the 29th day of December, 1865, I was requested to visit a mare, the property of Mr. Poole, of Meertown, supposed to be suffering from an attack of colic, but on my arrival I found that such was not the case. The animal was reeling and staggering about, occasionally falling down, and rising again with difficulty. The pulse beat 60 per minute; extremities were moderately warm; the conjunctiva highly injected, and the countenance indicated a good deal of cerebral excitement. There was partial paralysis of the hind legs, more especially the near hind leg, which was nearly powerless, but the sensibility was not in the least impaired. She was about ten years old, and had bred several foals, but did not hold to the horse last season. She had been kept chiefly on moors, and was rather low in condition when attacked, but they had never noticed her ailing before. I pronounced it to be a case of partial paralysis, and produced, in my opinion, from effusion of serum in the spinal canal.

Treatment.—I took from five to six quarts of blood from the jugular vein; gave her a strong dose of cathartic medicine, and had her well stimulated over the loins with mustard cata-

plasms and liquid blisters. I ordered her to be well clothed and to be kept perfectly quiet, giving her plenty of bran mashes and oatmeal gruel, &c.

30th.—The animal seemed much easier. She was lying quietly, eating some hay they had given her; she had also eaten some bran mash and drank some gruel; the pulse had lowered to 40 beats per minute, and the symptoms, generally, seemed much improved. She had dunged and also urinated pretty freely. She seemed quite helpless in her hind parts, but still the sentient power was not the least affected. I had her put into slings, introduced setons over the loins, and continued the other counter-irritants. I gave her some more laxative medicine, combined with diuretics and fever medicine, and ordered her succulent diet, &c.

31st.—Slightly improved; the pulse lower, and is able to stand on one hind leg, the fore extremities being quite free; the near hind leg was quite useless and slightly swollen, and very cold. I ordered the legs to be well rubbed and stimulated, and then bandaged. Continue the laxative and diuretic medicine, and allow her plenty of carrots, and a few boiled oats with her bran, &c.

January 1st.—Still improving. I now commenced with vegetable and mineral tonics, combined with laxative and diuretic medicines, as required, and increasing the quantity of corn gradually, with a little hay, &c. She continued to improve until the 18th of January, when I had her loosed out of the slings, and she seemed to stand quite strong, and could move about a little, but on the following day she appeared very much worse, and was not able to bear any weight on the near hind leg. I therefore had her destroyed.

Post-mortem.—I am sorry that I was not able to thoroughly carry out my *post-mortem* examination, on account of suffering at the time from a severe attack of bronchitis myself, so that I did not examine the spine. The whole of the thoracic viscera were quite healthy, also the stomach, bowels, liver, spleen, pancreas, mesentery, &c.; but on making an incision into the pelvis of the kidneys, I found about a teaspoonful of grayish mucus in each, and the mucous membrane lining the left or near kidney thickened considerably, and while I was looking at this, I noticed two small worms make their appearance from the *tubuli uriniferi*, and on examining the other kidney found two others; the substance of the two kidneys seemed quite healthy in every other respect. On removing the skin off the near hind leg, there was a good deal of effusion and fibrous deposits.

Remarks.—I consider these worms were the primary cause

of the paralysis, by causing a fundamental derangement of the kidneys, thereby impeding the proper secretion of urine, and by that means, I have little doubt, effusion took place in the spinal canal. I have reported the case as briefly as possible, so that should you think it worth your notice you might give us your able opinion on the pathology of it.

I am sorry to find that the council have decided to bring forward the new Veterinary Act without any modification. I consider none ought to be included amongst the members of the College without undergoing an examination of the practical knowledge of the art in which they are practising, and paying some fee for that examination and the certificates which ought to be given them, to distinguish them from the M.R.C.V.S. and the farrier and cowleech. I consider it very unjust to include every man calling himself a veterinary surgeon, and likely to lower rather than raise the qualified man in the eyes of the public. Rather let us remain as we are than make such a mistake.

[The parasites sent by Mr. Walters are specimens of *Strongylus armatus*, one male and two females. This entozoa has been found in nearly every tissue of the animal body.—Eds.]

ON THE EMPLOYMENT OF SPROUTED GRAIN FOR FEEDING PURPOSES.

By I. Seaman, M.R.C.V.S., Priory, S. Walden.

Sirs,—In a paragraph of the *Mark Lane Express*, February 19th, and *Times*, February 22nd, and *Veterinarian*, March 1st, in reference to experiments of the Board of Trade, conducted by Mr. Lawes, it is stated that malted grain is not superior to the raw grain from which it is produced. The report did not name what kind of malt was used, it might have been burnt porter-malt for aught that is known to the contrary. It is said—"Malt can only be used for finishing animals for sale or show." Sheep are said "to fatten as well upon raw as malted grain." These statements, sirs, are incompatible with facts.

All farmers are now pretty well agreed that raw barley, given to sheep as they are usually fed, is poisonous, and are particularly cautious in turning sheep on to barley stubble during the autumn, until the scattered ears have germinated.

A tub of meal on a farm requires to be as cautiously placed as the most deadly poison—arsenic. A small farmer, in the adjoining parish to which I live, through the carelessness of a boy has had two cows, worth £20 each, poisoned during the last six weeks from eating barley-meal; and a neighbouring small farmer has lost a valuable cow from the same cause. All farmers know that raw wheat and barley will poison horses, which are maintained in health and get fat when fed upon moist malt. All veterinary surgeons know that the most painful disease to which horses are subject, viz., "fever of the feet," is produced by raw wheat and barley taken as food, and they also know that the same grains malted are remarkably wholesome, and are quick fat-forming foods. Mr. Maynard, the eminent machinist of Whittlesford, has had four horses killed by eating raw wheat; and a lady, an employer of mine, during the spring of 1864, had eight horses attacked with "fever in the feet," from eating raw barley. Mr. Waldock, of Pampisford Mill, in the same year had four horses so crippled by eating barley, wheat, and bean-meal, as to be unfit for work for upwards of two months.

The most common cases of illness amongst cattle during winter that veterinary surgeons have to attend to are caused by the beast eating too much barley-meal, evidenced by cattle stealing sloppy pigs' food (wheat and barley meal), by which they are poisoned as quickly as by a dose of arsenic. A farmer in this parish, upon the faith of Mr. Lawes' report of 1864, used raw barley for feeding sheep, and the death of twenty-five of the number in ten weeks was the result of the experiment.

R. Frost, Esq., writing to me upon this subject, remarks, "I found the germinated barley prepared as directed by you to answer admirably, and when my people discontinued it some of the sheep died from eating raw grain." The words of a former communication to the *Veterinarian* for May last I here quote—"I will reimburse for every sheep, ox, or horse, killed by eating wheat or barley in a moist, malted state, but Mr. Lawes would require well-filled coffers to be enabled to compensate for losses by death of oxen, sheep, and horses, from eating the same grain in a raw state."

If Her Majesty's Government is satisfied that raw barley can be used for feeding sheep, and recommends it in lieu of malt, it is only fair that it should hold itself responsible to the farmer for losses caused by it.

My experiments with malt as food for all kinds of herbivorous animals extend over a period of ten years, and have been conducted upon a most extensive scale; it has been used for

all animals under all conditions, in summer and in winter, in closely confined sheds and in open fields; for ewes and lambs, and ewes whilst lambing, when not a sprig of grass or a turnip could be obtained; delicate lambs, diseased ewes, and flocks of other sheep have been restored to health; a poor ewe has produced from 30 lbs. to 40 lbs. of mutton in twelve weeks, with no other food than straw, chaff, water, and 10*s*. worth of barley malted.

Malt used by me has not been brewer's malt. Wheat or barley steeped in water forty-eight hours, spread upon a floor, turned every twelve hours until it arrives at the same stage of germination as grain just before being placed upon the kiln for making beer-malt, a farm-shed and common labourer, suffice to conduct the process, and the cost of making amounts only to 10*s*. per ton.

The only difference between my malt and brewer's malt is, that mine is not dried; the chemical change which has taken place is precisely the same in both. Diastase and large quantities of dextrine, grape and milk sugar, are formed, and the only difference is, that the water of mechanical mixture of brewer's malt which is driven off by the heat of the kiln, in my malt is withheld. The Board of Excise has told me my "preparation is malt, and can be legally made only by a licensed maltster." If my preparation is malt, *remove excise restrictions*, and in the face of the experiments of the Honorable Board of Trade with this malt, I beg to challenge Mr. Lawes in the sum of £500, to fatten with the same quantity of barley which has produced the malt, fifty sheep, ten oxen, twenty pigs, and five horses, time against time, profit against profit, to prove which of the two kinds of food will produce the greatest weight in ten weeks; to feed a flock of ewes the most successfully through a lambing season; restore a flock of sheep and lambs debilitated by disease; feed sheep during summers like those of 1864-5, when scarcely a sprig of grass can be obtained; or during winter, without roots of any kind; increasing the value of flocks with the least loss, against raw grain or any other food. Many eminent agriculturists in the neighbourhood in which I live, anxious to have my challenge accepted, have kindly offered to find labour, chaff, and other accommodation, by receiving the manure made during the experiment as compensation.

And as a further inducement for the challenge to be accepted, I will give the raw grain the advantage *of being used in double the quantity for the same number of sheep or oxen*. By a ton of my malt, with the addition of straw, chaff, and a small quantity of roots, 600 lbs. of mutton will be produced

in twelve weeks (at the present price worth £22 sterling), a sufficient quantity to give 1200 persons a meat dinner. Until my challenge is accepted and experiments fairly conducted with all meat-producing animals, under all conditions and circumstances which occur in the ordinary way of farming, grave doubts should exist in the minds of all interested in the question as to the experiments of the Honorable Board of Trade having been fairly conducted.

Chancellor of Exchequer's reply to Mr. SEAMAN'S *Second Letter, a Copy of which appeared in 'Veterinarian' for 1st March.*

COPY.

11, DOWNING STREET, WHITEHALL;
February 22nd, 1866.

SIR,—I am directed by the Chancellor of the Exchequer to acknowledge the receipt of your letters of the 6th and 18th instant, and I am to remind you that the requirements as to grinding, which we deemed necessary on the introduction of the measure about which you write, have been considerably modified, and the malt and linseed are now allowed to be either crushed or ground, and a much less degree of fineness is not now objected to, provided the ingredients are so mixed as to make it impracticable to separate them.

To allow the malt to be used without being first ground or crushed would expose the revenue to serious risks; and Her Majesty's Government could not propose to allow malt to be carried to the stage you suggest for feeding purposes without payment of duty.

I am, Sir,
Your obedient servant,
(Signed) W. B. GURDON.

To ISAAC SEAMAN, Esq.

CASES OF INVERSION OF THE UTERUS IN TWO COWS.

By GEORGE BOLLINGTON, M.R.C.V.S., Chesterfield.

Feb. 19*th*, 1866.

GENTLEMEN,—About 11 o'clock p.m. on the 5th of December last a message arrived requesting Mr. James Martin's immediate attendance to a cow, of the Alderney breed,

belonging to the Hon. F. C. G. Hunlone, Wingerworth Hall, which had two hours previously expelled her uterus after calving; I being in the capacity of an assistant to him, went in his absence. On my arrival I found the cow down, stretched at full length, with the whole of her womb behind her on the ground, much swollen, and straw and dung adhering to it; I washed it well with warm water, and placed it on some dry sacking, and then prepared to return it to its place. But in the first place I administered a draught containing Tinct. Opii ʒij, Aconite ♏viij. After which I got a staff about five feet long, and the thickness of a broom staff; I then tied a good-sized towel at one end of it, so as to assume the shape of a plug; I applied this to the fundus of the uterus, and gave it to an assistant, ordering him to push gently forwards, whilst I pressed at the sides, and directed the plug straight so as to enter the vagina. After persevering for about half an hour in this manner, I had the satisfaction to see the organ replaced. The cow strained very violently, when of course we desisted operations, until the pains subsided.

I left the plug in all night, and a man to remain with the cow to watch it, so as to prevent her from expelling it in case pains should come on. I left her two draughts, containing in each Tinct. Opii ʒj, Aconite viij, one to be given every two hours.

6th.—Found her down, and was told by the man that she had not been on her legs, and had strained violently occasionally during the night. Vagina a little swollen; bowels acting freely; drew out the plug without inducing any pain; gave her a draught Nitric Ether ʒj, Tinct. Opii ʒss, Ar. Sp. Am. ʒss; ordered a little mash, which was to be repeated during the day.

Night.—Still down, but had been on her legs during the day; had eaten all the mash offered her, and also drank some water; repeated the medicine given in the morning, minus the opium.

7th.—Standing; eats and drinks well, and seems progressing favorably in every respect; administered a little fever medicine.

8th.—Still doing well, gave her a tonic consisting of gentian and ginger, each equal parts.

10th.—Convalescent; left her some tonic medicine, and did not see her again professionally after this time.

Case 2.—In giving an account of this case I will be as brief as I possibly can, so as not to take too much space up in your valuable journal.

This cow belonged to a small farmer at Wingerworth (Mr. John Parks). He sent for our assistance on the 13th of the present month at 10 o'clock p.m. I went as soon as possible, and on my arrival found the cow in much the same state as the former one. I administered a dose of medicine, as above, and commenced returning it, using the same means as in the first case, and after a little more trouble, got the organ into its proper position; left a man in care of the plug as before, and left her for the night.

14th.—Cow down, but had eaten a little mash previous to my arrival. Drew out the plug; had not strained much during the night. I gave a little fever medicine, and saw her every day for three or four days, when she became quite convalescent, and is at the present time doing well.

In all cases that I have seen recorded it has been considered impossible to return an inverted uterus whilst the animal is down; but my opinion is, that it is the proper position: in both these cases I let the animals remain as I found them on my first arrival, nor did I even raise the hind parts; if the plug is used there is no necessity for anything of this kind; the virtue of the plug consists in its being left in the animal a few hours after the operation has been performed. Its presence induces the uterus to contract, whilst its weight serves to keep it in its position. I would strongly recommend some of my brother practitioners to try the above plan, when I think they will find it succeed beyond their most sanguine expectations.

To the Editors of the 'Veterinarian.'

RABIES IN A HORSE.

By E. G. Crowhurst, M.R.C.V.S.

March 2nd, 1866.

On Wednesday morning, the 28th February, I was requested to go to Lord Walden's, Loudwater, near Rickmansworth, to see a valuable hunter, "Marquis," who was stated to have something the matter with his loins, and kept rubbing his nose against the manger, &c., and shaking his head. On my arrival, his lordship's stud-groom informed me he had given a fever draught and urine ball, but the horse had bitten the drenching horn all to pieces. The animal, on my first going behind him, appeared rather excited, so I stood a minute or

two before I approached him. I was informed he was naturally very vicious, and that I must be careful or he would bite me. On my going up to him he became very excited, and dashed at me with open mouth, but I succeeded in getting hold of his head collar. He then struck at me, and became so affected with spasms (which I at the time thought to be tetanic) as nearly to fall. We succeeded, at last, in getting him round in his stall, with a lad on each side of his head, with the intention of administering some medicine, but from his extreme excitement and viciousness we found it to be impossible, as he threw himself down, and at one time got head collar and everything from off him, but I succeeded in getting a halter on him again. He would bite at the stall, twitch cord, or balling iron. I was repeatedly told he was naturally vicious with strangers, and, from the extreme paroxysms of spasms, I informed his lordship it was, in my opinion, due to tetanus or effusion on the brain, but as I had no opportunity of getting near the horse to examine him, it was very difficult to give an opinion. But I advised his lordship to get him into a dark, loose box, and keep him as quite as possible. There not being a convenient place at Loudwater, the horse was taken to his lordship's kennels at Charley Wood, and put in a loose box made dark; some hay water and mash were put, as I thought our attempting to give medicine would do more harm than good. He would take a piece of hay, and appear to masticate it, but I am not certain if he swallowed any. A leading rein was attached each side of his head. He was then taken to the kennels, about one and a half miles distant, and went very quiet, but at intervals shook his head, and, on going down hill, to use the expression of my pupil, "stepped like a blind horse." We got him in the box, and when the cords were cut he made a rush at one of the men again, but fortunately he got away. I sent some medicine, to be put in a mash, and ordered water sufficient for night and morning to be stood just inside the door, and no one to go into him except at night and morning. On listening at the door at times he seemed very uneasy, scraping the floor, &c. This was about 1 p.m.; was first seen about 4 a.m. That morning, I was told he kept getting much worse, and towards the evening became very bad indeed, carrying his pail round the box in his mouth, and broke another all to pieces, knocking his head fearfully, and died between three and four on the 1st of March.

Post-mortem. — On opening the abdomen, ecchymosed patches were observed at places on the peritoneum, covering the intestines and walls of the abdomen, also the cuticular

lining membrane of the stomach. *Liver.*—Its peritoneal covering had large ecchymosed patches of a paler colour, almost drab, but some of a dark red, and patches as though the membrane had been displaced, or partially so, by friction; the substance of the liver easily broken down, and of a dark colour. *Spleen.*—Appeared normal, or slightly darker than natural. *Heart.*—Fulness of its external vessels, as was the case with all the veins of mucous and serous membranes more or less; ecchymosed patches of endocardium of both right and left ventricles, and at places extended a short distance into its muscular structure; almost black in colour, particularly in the left ventricle and about the mitral valves, but where red patches as well, and petechial spots, and large clots of yellow gelatinous fibrin, both in the right and left ventricles, but no coagula of blood; the blood was all a good bit darker than ordinary venous blood. *Lungs* were engorged with black blood, and large dark patches of ecchymosis on their pleura, and similar appearances of erosion to the liver, and a peculiar greenish-black appearance at places.

The brain, and a portion of the skull, I forwarded to you, which I hope has arrived safe. I hope you will excuse the rough way in which it was sent, it having to be done at the station, in the snow, &c. On opening the ventricles there was the usual quantity of fluid, and nothing unusual to be seen. My object in sending it is that you might see the membranes of the brain, &c., as a member of our profession, who saw the animal while living, and *post-mortem*, gave his opinion that the animal died of meningitis. I have troubled you with a detailed account of the case, and *post-mortem*, asking your kind opinion whether you would consider the symptoms and *post-mortem* appearances consistent with rabies, and if, in your opinion, you would expect to find such symptoms and complications of disease with meningitis. I have heard since, the stud-groom says about nine or ten weeks ago the horse was bitten slightly by a strange dog at some stable where he was put in, and that his nose bled slightly. I also observed when the *post-mortem* was made, although seven hours after death, there was not the rigid stiffness observed after death; there was a slight protrusion of the cartilago-nictitans when excited, and eyes staring, &c.

[There can be no doubt that this was a case of rabies.—Eds.]

THE PROPOSED VETERINARY MEDICAL BILL.

By C. Dring.

Bath; *Feb.* 14*th*, 1866.

Sir,—In answer to your inquiry respecting the proposed Veterinary Medical Bill, I beg to submit to you my humble opinion in the matter. First, that all persons practising the veterinary art publicly, and in actual practice at the date of the passing of the Act, should be allowed to continue that practice as long as they like to do so, under whatever title they choose except that of *veterinary surgeon*. It would, in my opinion, be utterly useless to attempt to bring such men as these to a practical examination, therefore I say again let them continue to practise under some other name, but *certainly not* that of veterinary surgeon; it would be unjust to rob them of their means of getting bread; and I feel perfectly satisfied that not one out of twenty of these individuals, if willing, would be able to undergo what would be considered a necessary examination. And even if such a course as the latter should be taken, it would be unjust to us as veterinary surgeons to allow them to be classed as our equals, which evidently would be the case if the fourth clause in the proposed Bill was to be introduced. Secondly, that in place of the fourth clause the tenure of the following should be introduced:—"That on and after the 1st day of October next, *no individual* should be allowed to practise the veterinary art, under any name whatever (save and except those that were in actual practice prior to the above date), unless he is in the possession of the diploma of the Royal College of Veterinary Surgeons, as is the law in many of the countries of Europe, viz., Belgium, Holland, Saxony, Bavaria," &c. Third, that I do not consider the Bill as it at present stands will be worth its expenditure, as by it the veterinary surgeon will be but little benefited, while on the other hand the mere practitioner is made a veterinary surgeon. There are many individuals that I am personally acquainted with that practise the veterinary art under the various titles of horse surgeon, farrier, cowleech, castrator, &c., and enjoy a very large share of practice; many of these men do not even wish to assume the title of veterinary surgeon, and yet the nobles of the land are pleased to employ them, and to express themselves satisfied in their skill; such men as these are the very bane of existence to the veterinary surgeon, and making it such that, if he could

have foreseen before having entered the profession and spent his money in it, he would have turned his attention to something more profitable; as it is, many veterinary surgeons are frequently obliged to employ other means in conjunction to enable them to get the bare comforts they have been brought up with, and these means, I know, are, in many instances, derogatory to the profession. Now, it is to the future existence of these men that I should wish to put a stop to by an Act of Parliament; and I feel convinced, if such a course was taken, that immediately the standard of the profession would rise, and we should have men of education joining our ranks, out of pure sympathy for the poor dumb animals they would have to attend. But if the country still continues to allow these privileges to the farrier, whose education costs him nothing, it is simply ridiculous for a man to spend his fortune to become a veterinary surgeon.

In conclusion, I again say that if a Bill is brought into Parliament at all (let it be for the whole loaf), in future, as is the case with the human practitioners of this country, such measures as these made law, I feel satisfied, would be hailed with rejoicing by the veterinary community. I cannot explain to you the delight it gave me the morning I first received the form of the proposed Bill, but on opening the same, and reading its contents, I was utterly dismayed, for I could not see that it would advantage the veterinary surgeon of this day scarcely at all. The protection we require is that which will enable us to get sufficient practice for our support in a decent manner, and the title I take to be one of secondary consideration (an empty title is of very little value). These, sir, are the few remarks I have to offer, and with all due respect,

I remain,
Yours obediently.

To W. H. Coates, Esq.,
10, Red Lion Square.

By Robert J. Bolton, London, N.E.

March 9th, 1866.

Gentlemen,—Having interestedly perused the comments by several of your correspondents in the *Veterinarian* for the present month on the popular fourth clause of the proposed new Bill, I trust that you will be good enough to give insertion to a few remarks from my humble pen in connection therewith also.

With respect, therefore, to those made by "W. W.," I must say that, unhappily, my case is similar to that gentleman's, save that I never presumed to style myself a veterinary *surgeon*, as my cards always proved, but contented myself by appropriating the title of veterinary *practitioner*, considering that I had, with propriety, gone quite far enough.

An outline of my career in the profession may not, perhaps, be altogether out of place at present. I will, therefore, as concisely as possible, give such.

My father, who upwards of forty years ago left London, under very favorable auspices, was the first Englishman that established himself in "rocky" Gibraltar. This incident, coupled with his respectability and competency, not only gained him the esteem of the merchants and others there residing, but the title of "Garrison Farrier" likewise.

Though he was diplomaless, he, notwithstanding, had often expressed his hopes that my brother, who was my senior by six or seven years, and I, should have the advantage of a colloquial instruction, and obtain thereby that which he himself was not the possessor of. It may, therefore, be readily seen that he was not, at this time, however, prejudiced, as many are, against college or its appurtenances; but, on the contrary, he often regretted that he had not been a M.R.C.V.S.

With this view, then, we were sent to the best schools which a place of that size afforded; and every opportunity was afforded us likewise for acquiring a good foundation to our subsequently intended edifice, by encouraging us to practice in his forge and "walking the infirmary" under his tuition. Unfortunately for us, *death*, the "king of terrors," prematurely bereaved us, after a long and painful illness, of that beloved mortal; and we learnt with surprise shortly afterwards that, despite his favorable progress in business, his extravagances (I regret to remark) had sorely reduced us in pecuniary circumstances. Need I picture, then, our sorrow?

However, in course of time, after having served our regular apprenticeship, and profiting by study and practice, my brother and I conjointly carried on the business. During the interval between my father's death and this incident my mother, at the advice of several well-wishers, procured the services of a competent man from this to conduct the same.

At the commencement of the Crimean war I accepted the medical charge of horses *en route* to the Black Sea, and continued thus serving Government until the expiration of such.

Enjoying "a life on the ocean wave," I shortly afterwards found myself in the service of the Honorable East India Company, in the same capacity, during the memorable mutiny of 1857-58; and I therefore embrace this opportunity to observe, void of egotism, that I had, on both these occasions, the good fortune of "coming off with flying colours" (vide *Bombay Gazette* of October 6th, 1858, and January 29th, 1859). Subsequently still, I, in combination of a Mr. Wells, practised in Bombay; when, on receipt of tidings of the demise of my brother, I returned to Gibraltar and succeeded him in the business until the 16th November last, on which date I disposed of it.

As therefore shown in the preceding, gentlemen, I have had many years of experience in different parts of the globe in the profession; and in 1861 the *Bombay Gazette* gave place to my writings on the "management of horses at sea." On board of one transport *alone* (the "Golden Fleece"), I have had the responsible trust of upwards of 250 horses and mules (the latter being by no means easily dealt with in cases of sickness); and it would be a source of much self-regret if, in the event of my not obtaining my diploma prior to the 1st of October next, I became afterwards prohibited from practising as heretofore. Yet, gentlemen, though at a decided sacrifice, I endorse, in sincerity, the objections which so many of your correspondents have made to the fourth clause of the new Bill. For if the said clause be not expunged therefrom, as justly commented upon in this month's issue, what will prevent me, or others like me, from assuming *carte blanche* the title of veterinary surgeon? I would not be just to assume that title, I admit frankly; but why leave it in our powers to do so? Although I am not, unhappily, a M.R.C.V.S., I maintain that a "barrier of distinction" should be erected while the "mortar is fresh," between those who are such and those who are not.

I ask, why should the *English* College of Veterinary Surgeons be second to that of any other nation? In Spain (I have sound reasons for knowing) none but those who have successfully passed the required examination are permitted by law to practise as veterinary surgeons, why should it be otherwise in England? Thus it is why there is that total absence of quackery in Spain which is in England, and in British colonies particularly, so common!

Every endeavour, I would deferentially suggest, gentlemen, should be made to prevent rigidly the groom, coachman, and all unlearned pretenders to farriery from practising in the art under a penalty, and allowing, by these means, those

who, notwithstanding their non-possession of a diploma, are educated, and have been in practice for a certain stipulated period, a position of superiority over such ignorance; for these two classes of persons ought not, in justice, to be allowed the same privilege. I assure you, gentlemen, that in Gibraltar there are many unable either to read or write a single word practising as farriers, and one or two others with a "smack" of learning only similarly acting. How can the unlearned be in the least acquainted with the theory in this art? There is, actually, one individual in business in that place who either carries about with him a book on farriery when going to visit a sick animal, or else frames some excuse in the stables, and hurries home to copy a recipe for the gripes (every inward disease almost is "gripes" with him), word for word, like a schoolboy, for the apothecary. And, as if this was not laughable enough, he, like the rest of his class, is considered "very clever" by some persons.

Oh! if there is one place more than another where this noble profession is abused, that place is Gibraltar. There grooms, coachmen, livery-stable keepers, soldiers, and even convict-gangsmen have the impudence to practise in the art; and their egotism (ignorance) is enough to disgust a sensible man at times. They are so extraordinarily clever! (yes, but in their opinions they are not alone, let me tell you). Government has a farrier (another "clever fellow") in the commissariat, who is as unlearned, and almost as rough, as the most ignorant of our navvies, and cannot even speak a half dozen words in English.

I am of a firm and candid opinion to the effect that were a member of the Royal College of Veterinary Surgeons (taking with him a small staff of good shoeing-smiths, and a farrier to assist in general) to establish himself there, he would, ere very long, realise an independent fortune. What obstacle is there to lie in his path to fortune, since, there not being a diploma in the whole place, he would have it all his own way, and be able to dictate his own terms!

In conclusion, I will simply express a hope that the proposed Bill may be passed, so that not only those not possessing a diploma may not be allowed to style themselves legally veterinary surgeons, but also that no coachman, groom, and such like individuals, be allowed to practise as *farriers* even, and thus allow such gentlemen who have studied the theoretical part of the business and practised, say for ten years in it, to continue their practice unmolested by such characters, uuder a penalty. *Mors lupi agnis vita.* I would mnch rather forfeit for ever all claim to the profession than

see it any longer abused by that most ignorant class of beings.

Believe me, gentlemen, with very best wishes for the welfare of the profession, and respect,

Your obedient servant.

By George Conacher.

Perth; *March 9th*, 1866.

The deep interest I feel in the question which is at this moment "the question of the day" in the veterinary profession, must be my excuse for asking you to kindly grant me a small space in your next journal. In the first place allow me to express my best thanks to the president of Council for the step he has taken in sending out a circular to every individual member of the profession. I feel certain this act of his to ascertain the opinion of the whole body cannot fail in giving universal satisfaction. I belong to the class designated "Edinburgh men," holding only the diploma of the Highland and Agricultural Society, and have with much anxiety perused the various letters published in the *Veterinarian* upon the Veterinary Medical Bill. I have been very anxious indeed to see a prospect of the right hand of fellowship being held out to us with a view to securing a united profession—"one body politic and corporate." Now that the Council are attempting to legislate I most fervently hope and trust they will do it once for all—that they will frame a measure that will ensure some practical and substantial advantages to the profession. I believe the present time is most opportune for applying to parliament. The profession never stood so prominently before the public as it does just now; nor do I believe it ever stood in so high a position as it does at the present time. I feel fully persuaded it will be quite as easy to get an act granted prohibiting all men calling themselves veterinary surgeons who are not veterinary surgeons, as it would be to get the proposed bill as now worded, which is considered by some in the light of a permissive bill. It can be shown that in nearly every instance those men are imposters—a disgrace to our profession and only drag us down into the mire. I have heard it argued that government will not touch or allow us to interfere with old standing customs, with vested interest; and they illustrate this by reminding us that the law establishes and sanctions the public footpath which has been seven years a footpath. But surely those men altogether

overlook the fact that for more than twenty years the men I allude to have every day been breaking the law of the land by calling themselves veterinary surgeons, and no length of time can give them a vested interest under such circumstances, no more than a footpath becomes legalised so long as a large legible board has been from first in a conspicuous place, to the effect, "No road—all trespassers will be prosecuted." In the one case as in the other the law holds them as trespassers and are liable to prosecution. Then again as to judges and juries always leaning to the party prosecuted, I look upon it as one of the weakest of all weak arguments against this part of the bill. In every case upon record where the provisions of the law are clearly defined, and it is equally clear those provisions have been broken, the judge has no option in the matter—there is no alternative but to convict and apply the penalty. Is not the sterling probity and fidelity of our judges proverbial all over the world for enforcing the law without fear, favour, or affection, therefore I think this argument is entirely untenable and ought to be at once withdrawn. Then again I am amazed at the question, "Who is to give the information?"—"Who is to prosecute?" Is it not quite evident that the public may be safely left to deal with that question? If, for instance, a non-qualified man treats my horse and I am dissatisfied with his treatment, if he sends in his bill assuming the title of V.S., I can please myself whether I pay him or not. If he threatens to sue me for it I meet him with the threat that I will lay an information against him for violation of law. But I am told my argument comes with full force against myself. I am fully cognizant of this if the members of Council classify us with the cow-leech who calls himself a V.S., but has not the slightest claim to such a title; *in this lies the pith of the whole argument.* I think there is no fair-dealing man but who would at once pronounce such to be a gross injustice to us. I have received a regular course of veterinary instruction second to none in the world. I have passed satisfactorily an ordeal as searching, and by a board in every respect as competent and as eminent as the board appointed by the Council, saving it is not a board appointed strictly according to the charter. Surely, if the Council earnestly desired to heal the breach radically, they would stretch a point and hold our qualification as a proof of our proficiency, and grant us a diploma signed by the president and two members of Council, if such diploma only stipulated that it concurred in, or endorsed, the aforesaid examination. It would exempt us from the serious inconvenience of

attending at Edinburgh or London to be examined again. Surely this authority (viz. to grant a diploma to us without further examination) could be incorporated in the new bill to meet our particular case. This special clause would subordinate the clause in the charter which specifies an examination to be imperative, unless some such concession be made with a view to conciliate the Edinburgh college. I very much fear it is not impossible that the disunion which exists may be perpetuated for another generation.

To the Editors of 'The Veterinarian.'

By Stephen Gibbs.

Herne Bay; *March 7th,* 1866.

Gentlemen,—The silence of the "legal M.R.C.V.S. apprentice," and the "one or two sessioner," upon the proposed new Veterinary Bill, has induced me to remind you of us, although I had hoped to see other opinions upon it. We, I consider, are a part of you; at all events the knowledge we have comes from the same source; therefore we have nothing to do with the farrier. If the fourth clause is struck out, and a practical examination allowed, I hope we shall stand first in estimation for a membership of the corporate body. If you elevate the farrier to veterinary surgeon, let it be those that can produce certain rights handed down from their forefathers, or those that have been apprenticed in the usual way, which can easily be proved by indentures. I think if the member of the College, after being in practice, say ten years, wishes to become a consulting veterinary surgeon to practise the same, but when called to another district, or to a case under treatment, to act purely the physician's part, with other rights in law courts, it would highly advance the respectability of the profession with practitioners and proprietors. The real quacks are those that have turned out without any right or claim whatever; there is the falseness, there is the imposition upon the public. I hope they never will be allowed to use the name of veterinary surgeon; but if it must be done to facilitate the passing of the Bill, let it be so, as it must eventually be a great boon to stop future occurrences of this kind. We must leave it to your superior judgments and to the Council to frame the measure upon the best foundation possible under the present circumstances.

I beg to remain,

Your obedient servant.

To the Editors of the 'Veterinarian.'

THE VETERINARIAN, APRIL 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

CATTLE DISEASES PREVENTION ACT.

HARDLY had the Bill distinguished by the above title passed both Houses without a dissentient voice, when some honorable members seemed suddenly to have discovered that they had legislated under the impulse of a panic, and those stringent clauses of the Act which had been received with most favour on their first introduction were now unconditionally condemned. The slaughter clause, as before, is the one that excites the largest share of animadversion.

Sharing in the general obloquy are the clauses relating to transit of traffic in live cattle, for was it not to be expected that severe restrictions will be accepted by various conflicting interests with any great amount of satisfaction. It is not precisely pleasant for a man to be interrupted in the course of a prosperous career and made to sit idly by and wait for better days; nor is the actual amount of comfort which he may derive from the assurance that he is being ruined for the good of the country likely to be considerable. Nevertheless much inconvenience and some suffering are inevitable in all great changes; and philosophers tell us that what can't be cured must be endured.

In reviewing the proceedings of the last few months we are forcibly reminded of the Irish drummer who sought with humane and sympathising zeal to administer the punishment of the "cat" to a military delinquent in a manner that would meet the victim's wishes and the requirements of justice at the same time, and with this intent, in answer to the sufferer's alternating cries of "Strike high!" "Strike low!" did his best to follow his injunctions. Eliciting no signs of approval, he was fain at last to express his utter disgust at the man's ingratitude, and upbraided him for his want of appreciation of his sedulous endeavours to consult

his feelings. In like manner, in obedience to the wishes of deputations and the spirit of resolutions, certain restrictions were removed, and the cry directly went forth that the country was on the verge of ruin. Still more emphatic demands led to the issue of more stringent orders, and the country stood aghast at the discovery that every one could do what he likes with his own. Compensation which a short time back was to be the panacea for all the evil that had been, or might be done, has lost the charm which distance lent it, and has become a very dull and unsatisfactory piece of business, in which the owner of stock is compelled to exchange the animals he wishes to keep for the money he does not care to possess.

From all we can see and hear, the chance of *stamping* out the disease is very remote: the fact is—and we have maintained it from the first—all measures are rendered abortive by a national want of faith in their efficacy; Englishmen do not like the admission that they are beaten, and would rather fight the disease to the last head of stock than confess that the victory belongs to the enemy. That they will have plenty of opportunities of trying their strength yet there is but little doubt, and we verily believe that they would look back upon the loss of all their stock with complacency if they could only say that they had found out how to cure the malady.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

The Horse. By William Youatt. A new edition, revised and enlarged, by Walker Watson, M.R.C.V.S., with numerous woodcut illustrations. London: Longmans, Green & Co., Paternoster Row.

The scarcity of works of general reference in relation to the management of our domestic animals in health and disease induced the "Society for the Diffusion of Useful Know

ledge" many years ago to issue a number of volumes relative to subjects of this kind under the title of the "Farmers' Series." Amongst these works was one upon the horse. Its compilation was intrusted to the late Mr. Youatt, and constituted the *first edition* of the work under notice. The usefulness of the work soon became apparent, and another edition was early called for from the author.

Since the death of Mr. Youatt the work has gone through two other editions, the third being by the late Mr. Gabriel, who for many years held the office of secretary to the Royal College of Veterinary Surgeons; and the fourth edition by Mr. Walker Watson, M.R.C.V.S., Rugby, author of a valuable series of papers on Botany, which have from time to time appeared in our pages. The fourth edition commences, like its predecessors, with the history of the horse from an early period, and a description of the various breeds of this animal. This part of the work consists of 107 pages, containing many illustrations and a large amount of historical and other interesting matter. In the following chapters considerable alterations in the arrangement of the work have been made; thus, before proceeding to a consideration of the diseases of the horse, the editor brings under notice the subjects of breeding and the general management of the horse in regard to *stabling, food, exercise,* &c. This is a decided improvement, as it clearly points out the best means of keeping the animal in a healthy condition, and enables the owner, by giving attention to the rules here laid down, to avoid many of those sources of disease which too often result from bad management or neglect. The remarks on breeding and the influence of the sire and dam on the value of the produce have especial reference to a most important subject, and one which has not received that attention from breeders as a whole which it deserves, viz., the hereditary defects which are produced by breeding from animals suffering from structural disease. We fully concur with the following remarks at p. 108—"That disease is transmissible from the parents to the offspring there cannot be a doubt, and such is the hereditary nature of certain diseases that although they may not show themselves in the immediate progeny, they frequently do so in the next and more distant generation. There is abundant proof that blindness, roaring, broken wind, side-bones, spavins, ringbones, laminitis, and navicular disease have been bequeathed to their offspring both by sire and dam. One of the first principles we would therefore impress upon the breaders of all animals, and the horse

in particular, is that both parents should be free from disease."

After a description of the general management of the horse in the stable and other remarks on exercise, grooming, &c., &c., all of which show the editor to be practically acquainted with the subject on which he treats, we come to another very important part of the work, viz., the *Zoological Classification of the Horse, and the consideration of the various diseases to which he is liable.*

Considerable alterations have been made in the arrangement of this part of the work, which we recognise as great improvements.

The causes and nature of the various diseases are carefully pointed out, and the treatment suggested, although given in general terms, is in accordance with the nature of the disease. On this division of his labours the editor has evidently bestowed great attention, not only by making alterations in the arrangement, and in the introduction of several new diseases, but by adopting those views in regard to the pathology and treatment of disease which accord with the advancement of veterinary science.

The other parts of the work consist of remarks on *shoeing,* on *fractures,* and on *operations,* together with *a list of the medicines employed in the treatment of the diseases of the horse,* and remarks on *poisonous agents.* Several of these are well written and worthy of perusal, but with the chapters on medical and poisonous agents we feel somewhat disappointed. They are too brief, and would seem not to have received that elucidation from the editor which his thorough acquaintance with these subjects had led us to expect from him.

After some remarks on the *vices and disagreeable habits of the horse* and a chapter on *soundness and the purchase of horses,* the work concludes with a very able treatise on *draught,* but which we believe remains unaltered from the last edition.

As a work of reference to the general reader, and especially to those who take an interest in the horse, we can confidently recommend Watson's edition of Youatt on the Horse as being one of the best popular works we have at the present day.

Extracts from British and Foreign Journals.

THE CATTLE DISEASE OF 1714.

(*Continued from* p. 221.)

§. 1003. *Rule* 10. LET the Persons employed about the sick Beasts keep as much as possible to the Windward-Side of them, and carefully avoid Taking their Breath; and while drenching, or otherwise handling the Beast, keep their Hands wetted with a Mixture of *Salt* and *Vinegar;* and let each of them wear a *Linnen* GARMENT, after it has been wetted with *Vinegar*, and dried, over all their Clothes (like that which is used by some Country *Carters* for keeping off the Dashings of Dirt) to be buttoned close under their Chins, and at their Wrists, while they are among the *sick Cattle*, and put it off before they go to any other Business. And such Garments may be useful to *Physicians, Surgeons*, and others, when visiting People sick of the *Plague;* and may be decently made of LINNENS dyed of *blue*, or of a *Chocolate*, or *Snuff-Colour Brown*, which wil not at all, or very little, be altered by the *Vinegar*.

§. 1004. *Rule* 11. BOIL *Rosemary* in *Vinegar*, and set it a While under the Head of the Beast, so that it may draw into its Body some of the Fumes of it in Respiration. Or the Steam of *Vinegar*, which is made to arise by quenching red-hot Iron in it, may be used to the same Purpose.

§. 1005. *Rule* 12. LET a *medicated* BIT be put into the Mouth of the sick Beast, and kept there for an Hour, twice a Day. And for this Purpose the following Direction should be observed, *viz.*

§. 1006. LET the Bit of a Bridle be covered pretty thick with the following *Paste*, and the Paste inclosed with a Piece of Linnen-Cloth sewed together upon it, to keep it in its Place; and then, after it has been smeared with *Tar*, it should be put into the Mouth of the Beast.

§. 1007. *The medicated* PASTE.

TAKE Salt-Petre, *and crude white* Tartar, *after they have been separately reduced into a fine Powder, of each four Ounces;* Wheat Flour, *not separated from the* Bran, *half a Pound; mix them well together; then add two Ounces of* Tar, *and but so much Vinegar as shall be necessary to make a stiff* PASTE; *an Ounce of which may serve for one Application to the Bit.*

§. 1008. A considerable Advantage may be hoped from

the Use of this Medicine, because many Particles of it will pass with the Breath into the Lungs, and there thro' the absorbent Vessels into the Blood; and many of them will also mix with the *Saliva*, and be conveyed into the Stomach with it, which may contribute much to alter the Quality of the morbific Matter, and promote the Recovery of the Beast.

§. 1009. *Rule* 13. LET a ROWEL, or *Seton*, be made on the Inside of each Thigh, and another between the Fore-Legs towards the Region of the Heart, as soon as the Beast is found to be sick. These artificial Ulcers may be of great Service, by occasioning a Discharge of morbid Humours from the Blood.

§. 1010. *Rule* 14. LET a little *Vinegar* be injected into each Nostril warm, once a Day.

§. 1011. *Rule* 15. LET a Pail of *Water*, made Milk-warm, with a Handful or two of *Bran* mixed with it, be offered to it to drink two or three Times a Day: Or the Water in which *Barley* or *Malt* has been boiled.

§. 1012. *Rule* 16. If, in the Progress of the Disease, a *Purging* should happen to the sick Beast, especially if the Stools are *bloody*, let the following *Drench* be given, and the *Clyster* injected Blood-warm every sixth Hour, or oftener, if the Symptom is violent, 'till it is removed.

§. 1013. *The* DRENCH.

TAKE *one Drachm of* Virginian Snake-Root *finely powdered, three Drachms of fine Bole, a Pint and half of* Lime-Water, *two Ounces of* Brandy, *or* Rum; *mix for a* Drench, *to be given warm.*

§. 1014. *The* CLYSTER.

TAKE Camomile Flowers, Anis-Seeds *bruised*, Cortex Eleutheriæ *bruised, of each half an Ounce; fine* Bole, *or* Chalk (*reduced into a Powder*) *one Ounce;* Smith's Forge-Water, *two Quarts; mix, and boil them, 'till the Liquor comes to three Pints; then to the strained Liquor add four Ounces of* Brandy, *or* Rum. *Thus make a* Clyster.

§. 1015. *Rule* 17. IF the sick Beast dies, let it be immediately buried with its Hide on, and with, or without *Quick-Lime*, in a Pit seven, or eight Feet deep, and the Earth filled in close upon it, that no Exhalations may pass from the dead Body thro' the Earth into the Air of the Atmosphere.

§. 1016. II. RULES *to* FARMERS *for the Management of the* well Cattle, *to preserve them from the Effects of the* Infection.

§. 1017. *Rule* 1. LET *Rowels* be immediately made in each of the *well Cattle*, as directed (§. 1010). This Remedy may be as effectual to the Preservation of Cattle from the Contagion, as *Issues* have proved for the Safety of Men from the Effects of the pestilential Infection.

§. 1018. *Rule* 2. LET one, or other of the *Drenches* directed for the sick Cattle (§. 991, *&c.*) be given to every well Beast twice a Day for three Days. Or, instead of them, give a Quart, or three Pints of *Tar-Water*.

§. 1019. *Rule* 3. LET every Herd, immediately upon the first Sickening of any Beast, be divided into very small Parcels, and fed in separate Fields.

§. 1020. THE Importance of this Rule (§. 1017) will appear from the great Advantage of it experienced when the Sickness was at *Islington, &c.* in the Year 1714, related by THOMAS BATES, Esq., *Surgeon* to his MAJESTY'S *Houshold*. He says (speaking of the Cow-keepers) "They now divided "their Cows into small Parcels, by which they lost only "that in which the Disease happened; whereas, before that "Method, when one Cow got this Disease, if she herded "with one, two, or three Hundred (the Contagion was such) "scarce one did escape." *Phil. Trans. Numb.* 358. p. 883.

§. 1021. *Rule* 4. WHEN a contagious Distemper is among Cattle, there should be *Pits* always ready to receive the Carcases of the Dead; and the well Cattle should carefully be kept from coming near the Places where any have been buried.

§. 1022. THE proper Management of *Calves* may easily be deduced from the foregoing *Rules:* And when it is requisite to give them Drenches, a fourth, or sixth, or eighth Part of the Quantity directed for a full-grown Beast, more or less, may be given according to the Age, and Bulk of the Calf.

§. 1023. THE Directions given §. 754, *&c.* for *purifying Houses*, after the *Plague* has been in them, will sufficiently shew how *Stables* and *Cow-Houses* may be freed from *Contagion*, and rendered again fit for Use.

§. 1024. THE RULES and REMEDIES for sick CATTLE, proposed in the foregoing Sections, will, I hope, be of great Service when any contagious Distemper shall happen among them, produced by Causes that have a *dissolvent* and *putrefying* Quality, as was the Case about LONDON in 1714.

§. 1025. BUT *epidemical*, and mortal Diseases may happen among Cattle from very different, and, it may be, contrary Causes, which may require different Methods of Treatment, and Medicines of a different Nature.

§. 1026. IT therefore appears to me a Matter of great

Importance in every Country, when a great Mortality happens among the Cattle, for the GOVERNORS of it to employ some skilful *Physicians* to search out, and discover the *Quality* of the morbific Particles, and thence deduce Rules for Management, and the proper Remedies.

§. 1027. AND as to the SICKNESS now among the Cattle in *Essex*, in *Scotland*, and *Ireland*, I apprehend it may be of great Service, if the following METHOD shall be put into Practice, *viz.*

1. THAT in each Country an exact and particular Account be taken of all the *Symptoms* of the Disease.

2. THAT a sufficient Number of the Bodies of Beasts, in each Country, dying of it, be *dissected*, and an exact Account taken of every remarkable *Particular* that shall occur to Observation on Opening the Bodies.

3. THAT an Account be taken in each Country of the *Methods* of Management, and of the *Medicines* used for the Recovery of the sick Cattle; and for the Preservation of the Well; and likewise of the *Effects* of them; and each of these Accounts to be attested by proper Vouchers.

4. THAT these ACCOUNTS be transmitted to such Person, or Persons, as those in the Government shall direct, and appoint to receive them.

5. THAT some *Physician*, or *Physicians*, be employed to compare, and consider those several Accounts, and make what Discoveries they can by Means of them; of the Nature of the Distemper, or Quality of the Cause producing it, and of the Remedies by which it may be cured.

6. THAT, if several Physicians shall be employed in these Researches, each of them may have Copies of the forementioned Accounts, and separately consider the Case, and separately deliver in their Report; because, by this Means, the Sentiments of each Physician (whose Opinion is desired) will be known.

§. 1028. WHEN those in Authority, to whom it belongs, shall have received the Reports of the Physicians, they will better judge what Measures are fittest to be taken in Respect to the Sickness among the Cattle.

§. 1029. THE Method (§. 1027) proposed to Consideration, appears to me the most probable for Discovering the Nature of any epidemical Distemper, and the Medicines proper to be given for the Cure of it. And if that Method shall be put into Practice, and the true Nature of the contagious Disease now among the Cattle be thereby discovered, and effectual Remedies found out, the Advantages, I need

not say, will be very great to the Farmers, to their Landlords, and to the Nation in general.

§. 1030. If it is uncertain whether the Disease is *infectious*, Experiments should be tried to bring this Point to a Certainty; because it is not manifest that every epidemical Distemper is contagious.

§. 1031. I do not apprehend that *inflammatory* Fevers produced by excessive hot Weather, inspissating the Blood, are infectious.

§. 1032. And as to Diseases among Men, it may answer valuable Purposes, if (when any *new* epidemical Disease happens) Physicians were appointed by Authority to make Researches like those mentioned (§. 1027) and deliver their *Reports* thereupon, of what they judge to be the *Quality* of the Cause producing it, what the *curative* Indications, and what Kinds of Medicines will be the proper Remedies; and their Reports to be published for the Benefit of the Publick, if the Government shall think it proper.

§. 1033. I would now observe that, when a sickly Season begins to appear among *Cattle*, it will be useful to reflect on the Management and Medicines used in Time past on such calamitous Occasions, that so those Things, which were pernicious, or intirely useless, may be avoided in like occurrent Cases.

§. 1034. And here, *SIR*, I cannot but take Notice of the *Observations* you made, when the *Contagion* was among the Milch Cows at *Islington*; and of some *Directions*, which, with a great Deal of Reason, you think may be useful in such a future Distemper.

§. 1035. You observed, that *Bleeding* and *Purging* the *well Cows* was so far from Preserving them in Health, that those *Evacuations* did weaken them, and disposed them more easily to take the *Infection*, and that they were of no Service for the Recovery of those that fell sick: And that the other Medicines did them Harm, or, at least, were ineffectual.

§. 1036. Hence (§. 1035) we may reasonably conclude, that those Evacuations should not be used, if that Distemper should return again.

§. 1037. As to Milch Cows, when the like Contagion happens, you recommend the following Directions, *viz.* *Direction* 1. "To take away but little Milk, and let them "become dry as soon as possible.

§. 1038. *Direction* 2. "To throw away the Milk of the "sick Cows, if not also that of the well, where any of the "Herd are infected. Because the Selling, or the giving to

" Servants, or to Calves, the Milk of Cows infected with a " contagious Distemper may be pernicious in its Effects.

§. 1039. *Direction* 3. " To give the *Cows* no Grains, nor " other Food that tends to increase their Milk.

§. 1040. *Direction* 4. " To take the *Calves* from them, " and to keep them separate from each other, as well as from " the Cows.

§. 1041. *Direction* 5. " To kill both the *Cows* and the " *Calves* as soon as the Distemper appears in them, and to " bury them as soon as dead, in their Hides, or with un- " slack'd Lime, in deep Pits.

§. 1042. THIS Direction (§. 1041) you give on the Supposition, that there is no Method that can be effectual to recover them: And indeed, if this was the Case, if no Remedy could be found out, it would certainly be the wisest Course to kill every Beast that appears to fall sick of the contagious Disease; because the Doing so would prevent greatly the Multiplying of the Infection.

§. 1043. BUT it is to be wished, that some Physicians in every Age will employ their Thoughts (when a mortal Distemper shall spread among Cattle) to find out the Nature of it, and how it may be cured.

§. 1044. *Direction* 6. " THAT the *Farmers*, or *Cow-* " *keepers*, who have the least Symptom of the Contagion " among their Cattle, should not sell, or dispose of their " *Calves:* Because, in the Year 1714, the Distemper was " chiefly propagated and dispersed by selling them. And it " deserves Consideration, that, if they sell none till the Sick- " ness ceases, they will sell their Calves for a much better " Price."

§. 1045. THE PUBLIC was much obliged to you, *SIR*, for the important Service you did about thirty Years since, when the contagious Distemper was among the Cattle about *London;* and you have added to that Obligation, by your Observations, and Directions which I have with Pleasure related.

I am, with very great Esteem,

SIR,

Your much obliged, and
very humble Servant,

THEOPHILUS LOBB.

Bagnio Court in
Newgate Street,
LONDON,
May 16, 1745.

POSTSCRIPT.

SIR,

§. 1046. IT is a Pleasure to tell you, that since I wrote this Letter, I have been informed that the *Mortality* among the *Cattle* in *Ireland* was not propagated by any Contagion, but was occasioned by the *Scarcity* and *Badness* of their Food the last Winter, which therefore we may hope will soon cease, as their Food is now plentiful, and wholsome.

§. 1047. HOWEVER, what I have discovered of the *Quality* of the Cause, which produced the contagious Sickness among the Cattle in the Year 1714, and the Remedies recommended by me, will, I hope, be greatly serviceable, whenever such a Distemper shall again appear.

§. 1048. DISEASES among Cattle produced by a Scarcity, or Badness of their Food, I apprehend, have an *alcaline Acrimony*, predominant in the Blood, as the immediate Cause of the morbid Symptoms.

§. 1049. AND if this is true, then the Methods, and Medicines recommended by me in contagious Distempers of Cattle, like that in 1714, will be proper.

§. 1050. IT appears to me, very prudent, in Regard to the present Sicknesses among the Cattle in *Essex*, *Scotland*, and *Ireland*, to have Researches made (according to the Method proposed, §. 1027) in Order to find out the Nature, or Quality of the Causes, that produce them, and the proper Remedies.

§. 1051. BUT, besides the Accounts mentioned, §. 1027. there should be transmitted with them a particular Account of the Cases of the Cattle in the sickly Countries, as to the *Quantity* and *Qualities* of their Food.

§. 1052. THERE is in the LONDON GAZETTE of *Saturday May 25th*, 1745, the following Paragraph, *viz.*

§. 1053. "*Hambourg, May 19th, N. S.* The *Mortality* among "the Horned Cattle has now reached within a German Mile "and half of the Balliage of *Pinnenberg*, contiguous to the "Territory of *Hambourg*, which is of little Extent on the Side "of Danish *Holstein*. The Appearance of this same Distemper at *Hambourg*, gives an Alarm lest it should gain "further on that Side of the Country, proper Precautions "are used to prevent its Spreading, and to get the better of "it in its Beginning; which is attributed to some infected "Cattle having passed through there. This Evil has communicated itself likewise to the Danish Islands of *Zeeland* "and *Fuhnen*.

§. 1054. AND since there is an *uncommon Mortality* among

the larger Cattle in so many Countries far distant from each other, and under different Governments, it seems a probable Means of great Advantage, if the GOVERNMENT of each Country, where the Calamity appears, would not only order the Accounts mentioned (§. 1027,) to be taken; and, for Reasons given, (§. 930,) appoint Physicians to consider them, *&c.* but would likewise communicate those Accounts with the Report of the Physicians (employed in making the proper Researches) to the *Government* of every Country that has the like Calamity.

§. 1055. As to the *epidemical,* and mortal Diseases, which now subsist among the CATTLE in different, and distant Countries, it is at present uncertain, whether they proceed from one, and the same Kind of Causes; and the *Quality* of those morbific Causes is not yet certainly known.

§. 1056. AND the important Knowledge of these Things, (§. 1055.) only can be obtained by such Means as have been proposed. (§. 1027.) But if I may give my conjectural Opinion, it is this, *viz.* That the Sickness, and Mortality are produced either 1. By Causes of a *dissolvent* and *putrefying* Nature. Or, 2. By an *inflammative acrimonious Quality* of the Blood, of an *alcaline* Kind, however produced.

§. 1057. IF the Sickness proceeds from the first of these Causes, (§. 1056.) I apprehend it may be known, by Feeling the Ears of the sick Cattle, and finding them not hotter than in a Time of Health. And in this Case the *Drenches* directed. §. 991. to §. 993. will be proper Remedies.

§. 1058. IF the Disease is produced by the second Cause assigned, (§. 1056.) I think it may likewise be known, by Feeling the Ears, which, in such a Case, will be found hotter than in a Time of Health. And for such sick Cattle, I would recommend one, or other of the following Drenches.

I. DRENCH.

TAKE Gun-Powder *pulverised one Ounce,* Vinegar *four, or six, or eight Ounces, of common* Water-Gruel *one Pint; mix for a Drench to be given Warm, every sixth Hour.* Or,

II. DRENCH.

TAKE *of* Gun-Powder *pulverised one Ounce,* Tar-Water *one Pint, mix, with, or without an Ounce or two of* Sugar, *for a Drench to be given as the former.*

§. 1059. BUT the *Methods,* and *Medicines,* which in former contagious Distempers of Cattle proved either pernicious, or ineffectual, ought carefully to be avoided.

§. 1060. But the righteous Providence of God is to be acknowledged in the Mortality of Cattle, as well as of Men. The great God threatened his own peculiar People, the Children of *Israel*, if they walked contrary unto Him, (notwithstanding the Voice of previous Judgments,) that he would *destroy* their *Cattle**: and that, if they would not be reformed by the Destruction of their Cattle, and such Judgments, he would send a *Sword upon them*, and the *Pestilence*, among them†, *&c.*

§. 1061. The Order of the divine Threatnings recorded in *Levit.* Chapt. 26. shews plainly that, after *mortal Diseases* among *Cattle*, and other such lesser Judgments have been inflicted, (if they are not religiously improved by a Reformation,) the greater Calamities of the *Sword* and the *Pestilence*, and the *Famine* will follow. All which manifests that the most important Means to obtain Deliverance from any Tokens of the Divine Anger, and to secure the Protection, and Favour of God, is for the People to repent of their Sins, and return unto the Lord.

T. L.

May 30, 1745.

THE SIBERIAN CATTLE PLAGUE; OR, THE TYPHOID FEVER OF THE OX.

By William Budd, M.D., Clifton.

(*Continued from* p. 159.)

In 1747, the disease being still rife, but being then confined to the southern counties, another Order in Council was issued in the month of January, forbidding any cattle, whether sound or sick, to pass the Humber or Trent northwards, from that date to the end of March.

By continuing to execute to the letter every detail of this preventive code—and not, be it observed, by improved drainage of cattle-sheds—the epizootic was at last got under, leaving nothing behind it but this simple and pregnant history.‡

* Levit. xxvi, 22. † Vers. 25.

‡ From the length of time during which the epizootic lasted, it will, no doubt, be objected, that its extinction was rather due to natural causes than to the preventive measures adopted. That such causes may have had something to do with the decline of the pest, seems probable enough; but that they were powerfully seconded by the steps taken for the direct extinction of the morbid poison, whenever and wherever it cropped up, is absolutely sure. That alone these causes would not have sufficed, seems equally s .

These events speak for themselves. All hanging together, as they do, by a single thread, each is, in its way, decisive.

According to the partisans of spontaneous origin, never a year passes that cattle plague does not frequently arise spontaneously. But, here we have a thousand years, with all their variations of wet and drought, and heat and frost, and blight, and infinitely various chances of peace and war, of plenty and scarcity, and of breed and keep and condition, bringing back their myriads of departed oxen to bear witness against such a notion.

From the time when he first issued from the loins of the wild urus, to the date of this outbreak, the British ox, girt in by the sea, had remained protected from this plague, as English sheep had in the same way remained protected from sheep's smallpox.*

That this long immunity was not due to the absence of any of the natural conditions necessary for the manifestation of the disease, was proved by the fact that, when its germ was introduced, it multiplied as rapidly here as in its native home, and with precisely the same results, untraceable outbreaks, without number, included. That the disease when imported was solely due to the continual fructification of the imported germ, was finally proved by this other fact, that it was extinguished by measures in no way affecting the common conditions of cattle-life, but solely directed to the extinction of the specific cause.

Had the pest, of which this is the history, been some newly imported animal or plant, the events could not have been testified in a more clear and decisive way against spontaneous origin on the one hand, and in proof of the simple law of propagation by continuous succession on the other.

One narrative more shall be its own apology. The events it records have this striking interest, that they illustrate, in small compass, nearly all the leading positions taken in this essay; while the very blunders of the chief actors in them

There is no instance on record, in fact, in which this terrible disease, once introduced into a country, has died a natural death. That the measures enforced by Government did not shut up the epizootic sooner, is to be explained, partly by the difficulties attending their application, and partly by the fact, that the disease had already made a great head before they were adopted.

* I have made a pretty careful study of the history of past epizootics in this country, as far as the local resources of a provincial town will allow me; but although in Matthew Paris and in other works relating to the middle ages, there is mention made of many fatal murrains among English cattle, I can find no account which at all corresponds with the present malady. We may be pretty sure from the way in which it thrives here, that, had it once been imported, it would not have died out again.

only serve to put in a brighter light, and, by showing the width of their application, still further to enhance the importance of more than one of the great truths which it is my chief object to establish. The narrative itself, which I owe to the masterly 'Report on Cattle Plague,' by Professor Simonds, runs thus:

"Towards the end of 1844, the rinderpest, which had prevailed among the cattle in Galicia, passed through Moravia, and made its appearance in Bohemia, in the circle of Königgrätz. The malady had already made some progress in the district, when M. Verner, chief of the Veterinary Department of Bohemia, was sent from Prague by the government to inquire into the precise nature of the affection. This gentleman, who had had many opportunities of seeing the rinderpest, had no difficulty in recognising this disease in the malady in question; and, with a view to arrest its further progress, he recommended to the superior authorities the adoption of those measures which experience had shown to be best calculated not only for this, but to cause its quick extermination; namely, to slaughter the sick animals, isolate those which had been exposed to the contagion, and establish a *cordon* around the infected places. These measures were put in force at once, and soon had the effect of arresting the further progress of the malady, when some young physicians" (disciples of the pythogenic school, I fear) "who had had an opportunity of making, for their instruction, some *post-mortem* examinations of the cattle, thought that they had recognised in the affection an analogy to that of the *typhus abdominalis* of man. They, therefore, communicated their opinion to some members of the faculty of medicine at Prague, who, after making several autopsies, came to the same conclusion. A report was accordingly sent to the government, setting forth that the malady was not contagious, that it could rise spontaneously amongst the horned cattle of the country by other influences than those of contagion, and that the means which the government had adopted were not only useless but vexatious. As the faculty had great authority in all sanitary matters, the government, although it did not entirely remove the restrictive measures, still did not enforce them with its usual rigour; the result of which was that in a few weeks the malady had extended into several other circles of the kingdom, committing such dreadful ravages, that the Austrian government took alarm, and forthwith sent M. Eckel, Director of the Imperial Veterinary Institute, into Bohemia. He at once found that it was the rinderpest, and recommended the rigorous enforcement of

the former measures, the result of which was that in six weeks or two months afterwards the malady had entirely disappeared in the kingdom of Bohemia.'"*

With this narrative I bring the evidence to a close. Precise in character, admitting nowhere of more than one interpretation, sure in all its steps, and bound together by strict logical connection, this evidence places the following propositions on unassailable ground.

1. Cattle plague is a contagious and eruptive fever peculiar to the cattle tribe, in which the eruption, instead of occurring on the skin, as in smallpox, occurs on the internal surfaces of the alimentary canal and air-passages, nostrils included.†

2. The poisonous germs thrown off by the eruption are cast out of the body in the discharges from these surfaces, which thus become the chief means of propagating the disorder. In Russia the plague is often actually inoculated by virus from this source.

3. The specific poison which causes cattle plague is, like the poison of smallpox, the product of the disease itself; and the living body of the animal affected with it is the only known medium in which it is bred.

4. (A proposition which is merely a corollary of the last). Cattle plague, like syphilis, like human smallpox and sheep's smallpox, and, I may add, like the living organisms which people the earth, having first come into being under conditions of which we know nothing, is never known to spring up spontaneously now, but is self-propagated only.

To be successful, all attempts at prevention must be based on these principles. It is from want of clear apprehension of some among them, that certain foreign governments, in spite of an otherwise very stringent preventive code, have often failed to stay the pest. It will be from want of applying these principles sufficiently early, or with sufficient vigilance to meet every incident of the case, that we, in England, shall fail now, if fail we do.

To succeed, three things only are necessary; but they are all three vital:

1. To destroy the further manufacture of the poison by the instant slaughter of infected cattle.

2. To get rid of all poison cast off by them.

3. To prevent the reimportation of the pest.

All three, but the second especially, are things which

* 'Report on Cattle Plague,' by Professor Simonds, pp. 55-6.

† By the word "contagious," wherever used in this essay, I simply mean "communicable," whatever the medium, direct or indirect, through which the poison may pass from the infected to the uninfected.

require great knowledge and still greater vigilance—qualities which are only too likely often to be in default in this emergency. The first needs, in addition, a loyalty to high principle in the execution of measures seemingly adverse to the money interests of the hour, which, I fear, is likely to be often wanting in the farming class. Could all this be accomplished, cattle plague in England would be no more. Let us strive to go as near it as we can.

So far as to cattle plague itself. Now for the application of these principles to other contagious diseases, and especially to our own case.

If it be true that the specific poison of cattle plague is only bred in the body of the ox already infected with it, the fact is one which, I need scarcely say, carries us very far.

(*To be continued.*)

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

The comparison of the body of an animal with a common steam engine, if not perfect in a scientific point of view, has at least the merit of enabling us to study with ease certain common requirements of both.

Before a steam engine can do its work it must be supplied with coal, which is merely changed vegetable matter, still readily combustible. The coal burns when it receives a proper supply of air, and the heat produced by the union of the two is passed over to water, so that it may be converted into mechanical force. During the burning of the coal the water receives a steady boiling heat of 212° Fahr., and the furnace evolves gases which consist of carbonic acid, water, and vitiated air; those are finally thrown out of the chimney, while nothing of the original fuel remains behind except the uncombustible ashes in the grate.

Up to this point the animal body has a strange resemblance to the steam engine. The three requisites for the animal are—food, that is, recent vegetable or animal matter; air, which is to burn this in the body and keep up a steady animal heat of 98°; and water, necessary for the working of the complex animal machine. The food, like the fuel of the steam engine, is burned in the body, and in the same way,

except that the rate of combustion is slow in the latter and quick in the former; identical gases—viz., carbonic acid, watery vapour, and vitiated air—are discharged from the windpipe as they are from the chimney of the furnace; while nothing of the original food remains in the body, after the lapse of a certain time, except unconsumed substances, like the ashes of the furnace, rejected from the system as effete matter. At this point, however, our comparison is not perfect, for part of the food is used to repair the waste which the body continually suffers, while the engine is repaired with a material not found in the fuel.

Let us take up the comparison again, and apply it in another direction. The force of the engine primarily arises in the sun that shone on the world in past ages, and stored up its power in the plants which then grew, and are now preserved to us as coal. The fuel merely gives out this orginal power in burning, and the heat being converted into simple motive force by alternate push and pull of the piston, acting through levers, joints, and bands, enables mechanical work of infinite variety to be performed. The force in the animal is derived also primarily from the sun, which, illuminating the world now as it did in olden times, causes vegetation to flourish, and stores up force in the food to be applied in the working of the animal machine. The combustion of the food in the body produces a motive force of simple alternate relaxation and contraction of the muscles, which, working through levers, joints, and tendons, enables the animal to apply the force in an endless variety of ways. A few words more will complete the comparison for our present purpose. It is easy to express by calculation the amount of mechanical work which a machine can or does produce, and it is equally easy to show what labour an animal, with a given quantity of food, might perform; but it is beyond human ken to express by figures the intellect of the engineer who is required to guide the engine, and it is only permitted to us to wonder reverently at the vital intelligence which directs the working of the animal body and regulates all its voluntary and involuntary movements. Let us not confound the known with the unknown.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

OBSERVATIONS* ON A MALADY IN SHEEP AND GOATS ANALOGOUS TO THE RINDERPEST CAUSED THROUGH INFECTION FROM ANIMALS OF THE BOVINE SPECIES AFFECTED WITH THIS PEST.

By Professor Röll, of the Veterinary Institute, Vienna.

The first of these observations belongs to Dr. Maresch, District Veterinary Surgeon in Bohemia, and dates from the end of 1859. In his report of that time he points out the great resemblance in the symptoms and the *post-mortem* appearances he had noticed in a village where the rinderpest prevailed, in a similar malady by which the sheep had become affected, without, however, from the novelty of it, hazarding an opinion of the identity of the two maladies.

A similar fact came before the same observer in the beginning of 1860; here also, as with the first case, the analogy with the rinderpest was very striking.

At the end of 1861 the same facts were repeated in Bohemia, while almost simultaneously communications were received from Dr. Galámbos, professor of the Veterinary School of Pesth, that a similar malady had been ascertained to have occurred in Hungary. We shall give a *seriatim* account of all the observations which have come to our knowledge on this subject, first of those which have been made in Austria, which are mostly derived from official documents, and afterwards of those made in other countries.

Observations made in Austria.—1*st. Bohemia.*†

The first observation of the sort dates from December, 1859, at Wysoka, in the district of Melniker, after the outbreak of the rinderpest there; it occurred on a property where the malady prevailed that the sheep-pen was close to the shed where the cattle were kept, which afforded many opportunities for communicating the infection. Out of 108 sheep, the number of the flock, 38 fell sick with analogous symptoms to those of the rinderpest, 18 died, 4 were killed, and 16 recovered.

In the second half of the month of December, 1859, the

* Erfahrüngen is the German word, which means experience.

† Dr. J. Maresch "On the Infection of Sheep by the Contagium of the Rinderpest," *Austria Quarterly Veterinary Journal*, xix, p. 34, 1863.

rinderpest broke out in the town of Mseno. A butcher put some cattle affected with the pest in a stable amongst some sheep, by which means the latter became affected with the disease. The village shepherd, who resided a quarter of a German league from the town, in a place called Sedletz, and who assisted in the care of the affected sheep in Mseno, received 10 sheep from this property, which he took to Sedletz. These were put in five different properties amongst the sheep belonging to the proprietors, as they keep some sheep belonging to the village shepherd for his benefit. On all the five properties, which had altogether not more than 138 sheep, the malady broke out; 80 became affected, and of these 44 died, 21 were killed, and 15 recovered. On four of the properties, where the sheep were kept in close proximity with the *cattle*, as the sheep-pens communicated with the cow-sheds, the rinderpest broke out. On the fifth, where the sheep-pen was ninety paces from the cow-shed, and where the sheep were afterwards removed further away, the cattle, like those where no sheep from Mseno had been introduced, remained free from the rinderpest.

In November, 1861, Dr. Maresch found in Chlumetz, Jiêiner district, on a property three beasts affected with the rinderpest. Amongst the sheep, which were sheltered under the same roof with the cattle, there was one dead and several sick, so that finally, out of 52, the number of sheep on the property, 21 were affected of which 9 died, 3 were killed, and 9 recovered. On another property at some distance, carefully separated, where ten sheep were kept in the same shed with the cattle affected with the rinderpest, but parted off by a four-feet high partition, one of the sheep became affected, eight days after the slaughtering of the first cow. This case was followed by four others.

In Chlumetz there were, besides these, fourteen other properties infected with the rinderpest, but only in one of them were still some sheep, which, however, were kept in a place isolated from the cow-shed. These remained free from the disease.

It must be understood that no malady whatever was existing at the time among sheep either at Chlumetz or in the neighbourhood.

The appearances characterising this disease are as follows:—The malady sets in with dulness and weakness, and increased secretion from the mucous membrane of the eyes, which forms collections in the corners. There is also a more abundant mucous discharge from the nose, a diminution of the appetite,

increased respiration and pulse, slight cough,and soft evacuations. In favorable cases these are all the symptoms, and the sheep recover in from four to eight days. On the contrary, in severer cases the debility increases, the animals stand with their heads down, and their backs arched; sometimes they grind their teeth painfully, a feeble cough is heard, the mucus discharged from the eyes and nose is sensibly increased, the respiration and pulse are more frequent, the appetite and rumination are weak, the excrements are fluid and frequently voided. Finally, the animals are unable to get up, and die quietly, or with some slight convulsions. The fatal termination is between the fourth and sixth day from the time of the attack, sometimes a little later. The autopsy of those which died or were killed in the advanced stage of the malady showed the following lesions. The carcass as a rule, greatly emaciated, the abdomen distended with gas, the hind legs besmeared with the alvine evacuations, and the eyes and nose covered with thick muco-purulent matter. The mucous membrane of the mouth is usually much injected, and the gums in most cases partly covered with dark red spots, and partly with small clots of exudation; on removing these the mucus membrane underneath is found to be excoriated (analogous to the erosion found in the rinderpest). The mucus membrane of the larynx and the windpipe is sometimes pale, at others of a dirty red colour, its capillaries are injected, rarely covered with croupic exudations, but often with a slimy fluid. The lungs on the outside are of a dark red colour, showing well, defined spots, which on section do not crackle under the knife. These are often filled with a fluid like the white of eggs or a mass of coagulated exudations. The pleura is dry, pale, and emphysematous; the heart flabby, its cavities mostly filled with a soft coagulum. The rumen and reticulum show nothing abnormal; in the omasum there are found sometimes soft, at others dry, masses of food between its leaves. In the abomasum, is found a grayish dirty fluid; and in the pyloric portion the longitudinal folds are swollen, reddened, and covered generally with round or oblong exudations of a yellow-reddish colour, which are either strongly attached or but slightly adhering to the membrane. On removing these the membrane shows superficial erosions.

The mucous membrane of the duodenum, with that of the other small intestines, to a greater or less extent towards the large intestines, is swollen and reddened. Sometimes it presents ecchymosis, at others it is covered with croup-like lymph. A yellow substance is found in the areolated plexus of the glands of Peyer, which, on pressure being

applied, comes out like a plug. The contents of the small intestines are thin, fluid, and dirty; sometimes of the consistence of cream, and often containing detached portions of the exudations. The mucous membrane of the cæcum is mostly reddened, but rarely shows traces of exudation. That of the remaining intestines is sometimes pale, at others of a gray-slaty colour. At times it is like that of the cæcum slightly reddened.

The mesenteric glands* are more or less swollen; the spleen, as a rule, is normal; the liver not altered, and but seldom affected with hyperæmia; the gall-bladder only in one case was filled with dark bile. No exudations were found in the subcutaneous cellular tissue; the muscular was either pale or soft, sometimes of a reddish hue.

A comparison with the above-described symptoms and the *post-mortem* appearances with those of the rinderpest, shows the greatest analogy of the two diseases. A peculiarity was observed in this malady, inasmuch that the signs of pneumonia were always present, while this is very rare in rinderpest. The croupal process is also generally apparent in the third and fourth divisions of the bronchial tubes.

The period of incubation varied in Bohemia between from six to nine days. The malady was far less fatal than in the ox tribe; plentiful ventilation of the sheep-pens greatly favoured the recoveries and prevented the spreading of the disease. In the three infected places mentioned above, the total number of sheep attacked was 144, out of which 41 recovered, 71 died, and 29 were killed; the per-centage of the recoveries exceeded 30 per cent., while it must also be allowed that some of those that were killed might have recovered.

These observations show with certainty—*first*, that sheep are subject to be infected by the rinderpest. *Secondly*, that through this infection a similar effect is produced in sheep. *Thirdly*, that sheep so affected are capable of infecting cattle with the rinderpest (Sedletz). *Fourthly*, that this malady is not near so virulent in its effect as the same malady in cattle. In reference to the transmission of the rinderpest to goats, Dr. Maresch gives one case in the rinderpest-infected sheds in Sedletz and Mseno, in which, however, the pathological appearances failed. Besides which the following case came to my knowledge in an official report from Cankowitz, district of Chrudimer, in Bohemia, where, on the 10th of October, the rinderpest broke out after the passage of some Polish cattle, and which stopped a short time in the place; the malady lasted to the 10th of Decem-

ber. A goat was put up in a stall where some affected cattle had been; she fell sick on the 21st of November, showing the same symptoms as those which characterised the malady in the sheep, and died on the 25th of November. From the reports of the district surgeon, Dr. Werner, there were found, on the section of the carcass exudations and erosions, also hæmorrhage on the mucous membranes of the abomasum and small intestines, and also a remarkable distension of the gall-bladder.

II.—*Carniola.*

In the beginning of the month of April, 1863, the rinderpest broke out in Carniola. Already, in the month of May, information was received that a similar malady had been observed amongst the sheep and goats. During the prevalence of the pest similar cases occurred in six of the political districts, viz., Cernembl, Senosetch, Feistritz, and Laas.

a. In the Cernembler district the sheep and goats' pest began about the 10th of May, and lasted until the 31st of July, 1863. By order of the Imperial-royal ministry, I was directed to visit this district in June, in order to ascertain the nature of the disease.

In this district, which forms the south-west corner of Carniola, next to Croatia and the military frontier, the rinderpest was introduced by two oxen which had been only driven through; it broke out at a place called Preloka. At the time of the first information it was impossible, on account of the prevailing scarcity of fodder, to include the sheep in the sequestration of the village; they were therefore sheltered in the different outlying farms, with directions to carefully isolate them from the cattle which were also left on these farms, and to depasture them on separate meadows. In Preloka the rinderpest was exclusively confined to the cattle on one property, while, on the contrary, it spread on the outlying farms, where it had been introduced by some oxen which had been removed to them from the village before the official notice had been given, and there it attacked all the cattle, part of which died, and the others were killed on account of it.

On the occasion of the last sick animal being killed, on the 15th of May, there were some sheep on one of these farms, which were only separated by a low partition, made of boards, from the cattle. Of fifteen sheep, five became affected with a disease similar to the rinderpest in every symptom; these were killed. On the 19th of May, at the neighbouring farms, out of thirty-two sheep two became

affected, and died three or four days afterwards; others were attacked, so that before June, thirty had been attacked, ten of which died.

Meanwhile information was received that similar cases had occurred on the other farms amongst the sheep, which had been in the same meadows with the above mentioned, and that of fifty-one seventeen were attacked in from three to four days.

Some seven or eight hundred paces from this farmyard three other proprietors had their sheep in a common herd, under the care of two little girls. All these landowners gave in that the sheep had been driven over the limits of the cordon, determined by the commission in the neighbourhood of the farmyards and the pasture-ground. Out of this herd, thirteen were attacked, five of which died. At this time an ox was also attacked, and, seven days after, another, which presented all the symptoms of the rinderpest during life and all the morbid appearances on the *post-mortem* section.

As the breaking out of the malady could not be attributed to the last rinderpest-stricken cattle in that village, the cause of the outbreak in these two cases must be sought in the transmission of the infection from the sheep to the horned cattle, and that through the medium of the people on the farm.

Here we have, then, the transmission of the rinderpest to the sheep, and the spreading of it to other sheep, and finally the retransmission of it to the horned cattle again.

In the next village, Balkowce, where the rinderpest broke out on a property on the 13th of April, the last affected animals were killed on the 23rd of April, but the cleansing and disinfecting could not be completed for some time, on account of a large accumulation of dung, and during which time the sheep frequently went over the same land. The disease broke out at the end of April in the flock belonging to this proprietor, and it continued to the end of May, and spread more or less among the forty animals of which the flock consisted, but of which only six died.

At the same time, commencing from the 7th of May, the malady attacked thirty-four sheep the property of the immediate neighbours, twelve of which died. During the prevalence of this pest amongst the sheep the oxen of the same proprietors became affected with the rinderpest, which was proved not only by the diagnosis, but also by the *post-mortem* appearances.

The rebreaking out of the rinderpest can only be attributed to the retransmission of the malady from the sheep,

more than a month having elapsed from the time the last affected beasts were killed (23rd of April to 26th of May), while the sheep had been affected from the end of April, without interruption, and the persons who attended the infected sheep were constantly in contact with those who attended the cattle.

In the neighbouring village of Pauline the sheep were first infected from Balkowce, and only after two had died did the pest break out amongst the horned cattle. One ox was attacked, then a second became affected on the same property; here like wise the pest spread from the sheep to the horned cattle in from two to four days. For these dates and the extirpation of the pest in the Cernembler, I have to thank the district veterinary surgeon, Dr. Maly, who, during my absence, attended on that pest-stricken district, and furnished me with the information. In Preloka, in two herds, some goats which were kept with the sheep also became affected with the same disease, presenting the symptoms of the rinderpest; from twenty-seven herds twenty were affected—eighteen recovered, two died.

The appearances observed in the diseased sheep and goats agree perfectly, according to the description of Dr. Bleiweis and the district veterinary surgeon Dr. Maly, with those described by Dr. Maresch, and which were principally as follows:—Debility and dulness, diminution of the appetite, complete suspension of rumination, even at the beginning of the attack, followed by a muco-purulent discharge from the eyes and nose, difficult and increased respiration, with, at times, a weak painful cough. The mucous membrane of the mouth was generally reddened. In all cases diarrhœa set in, the evacuations being either of a thin gruelly consistence, or completely fluid, and of a very offensive odour. The pulse ranged from 120 to 160 in the minute; the emaciation and loss of strength rapidly increasing. The course of the malady, in fatal cases, was from four to five days. In those cases where the malady terminated favorably the animals began to feed, the rumination returned, they became lively, the diarrhœa ceased, and they soon recovered. In these cases the nasal flux was the last symptom to disappear; in from ten to fourteen days the sheep were generally convalescent.

The section of the carcasses of those which had died or were killed in an advanced stage of the disease gave the following results. In those animals which had suffered from want of sufficient food the inner canthus of the eyes and the nose were encrusted with purulent mucus. Inversion of the rectum was present to a certain extent, and the hind parts

and thighs were covered with fetid diarrhœic matter. The mucous membrane of the mouth and gums was partly of a deep red colour, with excoriated spots, partly coated with exudations in places (erosions). The mucous membrane of the larynx and trachea was hyperhæmic, particularly on the anterior portion of the latter; sometimes it was covered with purulent matter, at others coated with croupic exudations; the lungs were but moderately filled with blood, yet in some parts to a greater or less extent they showed red or grayish hepatization. In one case the pneumonia extended to the pleura, and the lungs adhered to the sides with strong bands of lymph.

In the abdominal cavity were generally found a few ounces of clear serum of a pinkish colour; in the rumen and reticulum was found a mass of wet green fodder; the contents of the omasum were soft, and of the consistence of gruel; the epithelium of these three viscera was easily detached, and that of the omasum also softened; in the abomasum was also found a remnant of green fodder; the mucous membrane, particularly that covering its longitudinal folds, was hyperhæmic and œdematous; excoriations were found in some spots. In the duodenum was contained a colourless acrid fluid, which caused a pricking sensation in the skin of the hands; the mucous membrane was pale, very much softened, and easily removed by passing the blade of the knife slightly over it, even with the pouring of water on the surface it peeled off in places, leaving the muscular coat completely exposed; the glands of Peyer were areolated and swollen, and, by slight pressure, a purulent fluid oozed out of their follicles. In the large intestines, particularly in the cæcum, the longitudinal folds were much swollen and hyperhæmic; in one case bloody exudations were found, of the size of a hemp-seed, some adhering, others loose, and covered with exudation; the mucous membrane of the single colon and rectum was pale, with the exception of the part that protruded from the anus, which was swollen and hyperhæmic. A colourless fluid was contained in the cavities of these intestines, mixed with particles of food. The liver was of a pale-yellow colour; the gall-bladder was at times filled more or less with thin bile of a pale colour; in one case the mucous membrane was covered with exudations, and the biliary tubes were filled with bile; the spleen presented no change; the kidneys were very pale and softened, while the mucous membrane of the bladder was in some cases without alteration, but in others swollen and hyperhæmic.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL HELD MARCH 2ND, 1866.

PRESENT:—The President, Professors Spooner and Gamgee, Messrs. Broad, J. C. Broad, Burley, Ernes, Field, Greaves, Harpley, Harrison, Moon, Silvester, Wilkinson, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

The *President* having made a few introductory remarks in reference to convening the present meeting, trusted that the suggestions of the Parliamentary Committee for the admission of those holding the Highland and Agricultural certificate into the body corporate would be proposed by some Member of the Council. He also stated, that his attention had been directed to a Resolution received on the 31st of January last, from the members of the West of England Veterinary Medical Association, which he would call upon the Secretary to read.

He further remarked, that it was deemed advisable to ascertain, by means of a circular, the feelings and opinions of each member of the body corporate, to whom a copy of the Bill had been previously sent.

The following was the result:—369 replies had been received, of which there were, in favour of the Bill, 137—against it 220.

The *Parliamentary Committee* reported, that having perused the correspondence in reference to the proposed Veterinary Medical Bill, they find that the majority of the writers object to the Bill in its present form, particularly the fourth clause. They have to propose that it be reconsidered and revised by the Council, and in addition they offer the following suggestions:

"That some member of the Council propose that all those who are holding the Highland and Agricultural Society's certificate only be admitted into the body corporate on the payment of such fee as the Council shall determine."

"That the Bill should be made retrospective."

The *Committee* further suggest that "steps be taken to create Fellowships; and that these suggestions be embodied in the preamble of the Bill."

After a very considerable discussion—

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Silvester*—

"That the Resolution of the 25th of October, 1865, be rescinded, and that the Bill be remitted to the Parliamentary Committee, with a view of the date being removed from Clause iv, and the words 'since the obtainment of the Royal Charter,' being substituted, and such other alterations as may be deemed necessary."

It was then moved as an amendment, by *Mr. Ernes,* and seconded by *Mr. Greaves*—

"That the 4th Clause take effect from the obtainment of the Charter."

The amended Resolution having been put from the Chair was negatived. The original motion was then carried.

It was considered expedient that the Parliamentary Committee should be summoned as early as possible, to facilitate business, and that the legal adviser be in attendance. It was further suggested that the Committee should take as liberal and comprehensive a view of the subject as possible, so as to admit all persons holding the Highland and Agricultural Society's certificate on a nominal examination.

By order of the Council,
WILLIAM HENRY COATES,
Secretary.

SPECIAL MEETING OF THE COUNCIL, HELD MARCH 9TH, 1866.

PRESENT:—The President, Professor Gamgee, Messrs. J. C. Broad, Ernes, Field, Mavor, Moon, Harpley, Harrison, Robinson, Thacker, Wilkinson, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

Letters were then read which had been received from Dr. A. S. Taylor, relative to the appointment of an Examiner in the room of the late Professor Brande, in which he begged to recommend to the favorable notice of the Council Dr. W. A. Miller, Professor of Chemistry at King's College, as being a gentleman eminently qualified to fill that position.

After some discussion as to the immediate necessity of filling up the vacancy—

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Ernes*—

"That the vacancy caused at the chemical table be not filled up at present, and that the election of a Member at the Examining Board, *vice* Professor Brande, deceased, be postponed."

It was then moved by *Professor Gamgee*, and seconded by *Mr. J. C. Broad*—

"That Dr. Burdon Sanderson fill the vacant chair."

It was moved as an amendment by *Mr. Robinson*, and seconded by *Mr. Harpley*—

"That Professor Miller be appointed to fill the vacancy caused by the death of the late Professor Brande."

The amended Resolutions were put from the Chair and lost —and the original Motion carried.

The Report of the Parliamentary Committee was next read.

"The Parliamentary Committee report that having had a personal interview with the legal adviser of the College, Mr. Wilkinson, he has proposed that the Bill be made retrospective for one year; to which there could be no objection.

"An additional retrospective clause, from the obtainment of the Royal Charter might also be prepared, to be inserted hereafter, should it be deemed necessary.

"That it was very desirable that Mr. Newdegate and Mr. Holland should be consulted, in order that they may be able to ascertain what measures Parliament would be disposed to grant.

"That the subject should be fairly discussed by the Members of Parliament who have charge of the Bill; and that it should be introduced as a Government measure."

The Solicitor further stated that he had communicated with Mr. Newdegate and Mr. Holland, but had as yet received no reply; he recommended that whatever interest could be obtained should be made available.

With regard to introducing Fellowships in the profession, it would be a subject upon which Parliament would be quite indifferent.

The Committee also report, "That having carefully considered the Clauses of the Bill, and made a few alterations therein, they recommend the following for the consideration of the Council:

"Provided, nevertheless, that this Act shall not affect any person who shall, prior to the first day of October, one thousand eight hundred and sixty-five, have assumed the name or title of 'Veterinary Surgeon,' and at the period last mentioned shall be actually in practice as such."

The Bill, and its preamble, were then carefully revised and amended by the Council. Several general alterations were made, more especially with reference to Clause iv.

It was moved by *Professor Gamgee*, and seconded by *Mr. Ernes*—

"That the Bill as amended in Committee, and now cor-

rected, be adopted and placed in the hands of Messrs. Holland and Newdegate, to be introduced before Parliament."—Carried.

It was ordered that 100 copies of the Bill be printed.

Professor Gamgee gave the following notice of Motion:

"That Bye-law No. 20 shall be altered as follows. Instead of 'Twelve of the Examiners shall be selected from the Members of the College and eight non-members eminent for their knowledge of medical science or chemistry,' the following words shall be substituted: 'Twenty Examiners shall be selected, and of these not less than Twelve shall be Members of the College, and the remaining eight may be non-members eminent for their knowledge of medical science or chemistry.'"

By order of the Council,
WILLIAM HENRY COATES,
Secretary.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE ninth quarterly meeting and annual dinner of the above Society was held on the 26th January, at Mr. Marshall's, Central Exchange Hotel, Newcastle-upon-Tyne.

The following members were present:—Messrs. Wilkinson, Stephenson, and Hunter, Newcastle; Professor Armatage, London; L. Scott, Hetton-le-Hole; W. S. Moore, Gateshead; Messrs. Thompson and D. Dudgeon, Sunderland; Wm. Marshall, Glanton; D. McGregor, Seaton-Delaval; C. Hunting, South Hetton; Thos. Foreman, Leadgate; Wm. Allison, Thornley; and John Hutchinson, South Shields.

Mr. H. E. Wilkinson, President, occupied the chair.

The Secretary's report showed a highly satisfactory state of the Society. On the conclusion of the business proceedings the President delivered his inaugural address, which treated upon veterinary politics generally, and was listened to with great attention by all present. Mr. Hunting proposed, and Mr. Dudgeon seconded, a vote of thanks to the President for the able and practical manner in which he had treated the various subjects. Carried unanimously.

Mr. Stephenson proposed, and *Mr. Dudgeon* seconded, that Mr. Hunting's paper on rinderpest be brought forward for discussion at the next meeting at Durham, which was agreed to.

The members and friends afterwards dined together; Mr. H. E. Wilkinson, President, in the chair, and Mr. C. Stephenson occupying the vice-chair.

The President proposed the usual loyal and patriotic toasts, which were cordially responded to; that of the army, navy, and volunteers, being responded to in appropriate terms by *Messrs. Stephenson* and *Hutchinson.*

The toast of the evening, viz., the North of England Veterinary Medical Association, was given by the *President* in a very neat speech, which was received with great applause.

Mr. C. Hunting, gave the Royal College of Veterinary Surgeons.

The President, at this part of the proceedings, presented Professor Armatage with a testimonial, consisting of a purse of gold, together with a valuable collection of books, on behalf of the Members of the Society, for the valuable services he rendered in the founding of this Association.

Mr. Armatage acknowledged the present in appropriate and feeling terms.

The evening's entertainment was brought to a close, the usual toasts connected with the Veterinary Medical Associations being given and responded to in fitting terms by the different members.

JOHN HUTCHINSON, V.S., *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

ON THE EDUCATION AND TRAINING OF THE VETERINARY PUPIL; THE PRESENT STATE OF VETERINARY MEDICINE AND VETERINARY LITERATURE; AND ON THE ART OF HORSESHOEING, AND ITS RELATION TO THE VETERINARY PROFESSION.

An Inaugural Address delivered before the Members of the Lancashire Medical Association, January the 10*th*, 1866. By W. HAYCOCK, Veterinary Surgeon, M.R.C.V.S., President of the Association, &c.

(*Continued from p.* 243.)

OUR next topic is THE PRESENT STATE OF VETERINARY MEDICINE AND VETERINARY LITERATURE.—To take a full and comprehensive view of veterinary medicine and of its literature, as each exists at present, would require more time than we possess upon the present occasion. I can only, therefore, briefly touch upon the more prominent features of each.

Veterinary medicine in one broad feature resembles the moon, viz., the light which it possesses is but borrowed light. The practice of veterinary medicine has grown as human medicine has grown; everything we possess we have derived either directly or indirectly from human medicine, or from its correlative branches of science;

in fact, veterinary medicine, as it exists and subsists at this hour, is, strictly speaking, a huge parasite, and its literature a jungle of fragments and inanities. We are destitute of even a single treatise upon pathological anatomy. Many observations respecting this department of our profession are to be found scattered throughout the pages of the *Veterinarian*, but no treatise upon the subject exists. We are also destitute of a work upon the physiology of the horse and the ox. It may, perhaps, be said that no special grounds exist for such a book. I believe they do exist, and that a work of this kind, taking up its ground from certain special points of view, would be of great practical value to veterinary medicine.

A sound knowledge of pathology is vitally essential to the veterinary surgeon; such knowledge, however, cannot be obtained otherwise than by great industry, and the observer possessing a sound knowledge of physiology and animal chemistry. One of the first essentials to pathological knowledge is a knowledge of anatomy. How does our literature stand in this respect? I am ashamed, gentlemen, to state the truth: we do not possess a single treatise upon anatomy at all adequate to the wants and requirements of the profession. Percivall's 'Anatomy' was the text-book upon this subject when you and I were pupils, and it remains the text-book to this hour. The edition which I possess is without date upon its title-page; but its preface is dated 1832, so that the book was printed thirty-five years ago. It was a notable book at that period, and it manifests on the part of the writer an amount of labour and industry certainly not seen amongst us at this day, or some one ere this would have sent forth a treatise upon the same subject worthy of the age and of the times in which we live.

Of a work upon the anatomy of the ox we are entirely destitute unless we recognise those short contributions as such written by Youatt, over thirty years ago, and incorporated in his work entitled 'Cattle: their Breeds, Management, and Diseases,' and published by the Society for the Diffusion of Useful Knowledge.

During the last thirty years scores of works upon the anatomy of the human being have appeared in this country. Like all other branches of science allied to medicine, anatomy has made great advances, its path has been most assiduously cultivated by a host of men whose names are famous in the annals of medicine. Brain, scalpel, and microscope, have produced the highest results in this department, and practical medicine and surgery have advanced in a like manner. But allow me to ask in what repository are our labours to be found? What discoveries have we made in anatomy, or physiology, materia medica, therapeutics, microscopy, or animal chemistry? Where are the names of our men made famous by their discoveries in the above-named sciences?

Human medicine has done much, very much, to aid us. What have we done in return to aid human medicine? Gentlemen, these are questions of grave significance to ourselves; they imply a strange indifference on the part of the profession to what pertains to its progress and welfare; they imply, in fact, that, although we may

desire to rank as scientific men, we leave the development of science to others, and then appropriate their labours and the fruits which spring from them. That we are regarded as unprofitable servants seems to be a matter patent to every one. Whoever heard of a veterinary surgeon being presented at court, or being made a baronet, or being pensioned by gracious Majesty for important services rendered to the commonwealth, or of the senate of any of our universities conferring a scholastic degree or a degree of eminence upon a veterinary surgeon? Nay, I believe we cannot boast even of a single member of the veterinary profession being a fellow of the Royal Society of either London or Edinburgh. We could by industry and determination carve for ourselves a noble position, but a torpor exists amongst us which is deplorable to look upon; already one or two societies like the present are threatened with dissolution simply because the members cannot be induced to take an interest in what pertains to their own advancement and progress. Why is this, gentlemen? Are we dead to ambition, and to those nobler sentiments which distinguish the high and learned of our race, that such apathy should exist? The labours of the skilful anatomist, chemist, microscopist, and pathologist, are required in almost every department of our art; whole fields relating to it are all but fallow, fields which, if explored by a clear eye, aided by even moderate industry, would be rendered both fruitful and profitable in the highest degree.

Our knowledge is exceedingly limited of the anatomy, physiology, and pathology of the digestive organs of the ox; also of the anatomy, physiology, and pathology of the nervous system of the horse and the ox; also of the changes induced by disease within the urine of these animals. We also require a more intimate knowledge of the specific action upon the healthy organism of the horse and the ox of nearly every medicine we use in disease; and he who successfully cultivates this branch of our profession will at the same time determine the true relation which exists between the disease-producing power of drugs and their curative power in disease. This latter field of inquiry is, perhaps, the most important of all, for, just in proportion that it is successfully explored, so will our art become a positive science, and be placed as such in the annals of the world.

We require men to work for the advancement of veterinary medicine, and to those who desire so to work power will be given. Every member of our profession may be supposed to own a talent of some kind, and all talents are given to use wisely. "Every man," says Emerson, "is a consumer, and ought to be a producer." The veterinary surgeon, by the practice of his profession, is fed, clothed, and housed, and he, therefore, in time, becomes largely indebted to the profession, which he can only repay but by freely contributing to its progress and advancement. To pay this debt, gentlemen, is strictly in accordance with the true use and purpose of man.

THE CATTLE PLAGUE.—The next topic I shall bring under your

notice is the all-absorbing one—The Cattle Plague. I shall be brief, however, in my remarks respecting it. The origin of the disease is a question which has been keenly debated, but, nevertheless, still remains in doubt and obscurity, many observers contending that it was imported from Revel along with a cargo of cattle thence, and landed in Hull in the month of July, 1865; while others, of equally veracity and clearness, deny this, and assert with equal vehemence that the origin of the malady is to be attributed to the excessive heat of the past summer, and to other causes of an atmospheric nature which they do not explain.

The medical journals have vied in disseminating innumerable fancies respecting its nature, and the newspapers in disseminating recipes and the names of drugs which never fail to remove the malady, but which somehow never *do* remove it, and beyond all possibility of doubt never *can* remove it. Physicians and surgeons, eminent and obscure—veterinary surgeons, old and young—have also vied to cure the disease, but, I am sorry to say, with little or no success. The materia medica has been ransacked in vain, and the only remedies which appear to maintain their ground against all invaders are the pole-axe, warmth, patience, and water gruel; while quacks, cow-leeches, druggists, butchers, and amateurs of every grade and degree, are reaping such a harvest as the most sanguine of them very possibly never hope to reap again.

The opinions of those who are emphatically declared to be "*the highest medical authorities,*" respecting the pathological nature of "the cattle plague," as usual, have differed, and do differ, most widely in their opinions. First, We were told it was the real steppe murrain, genuine as imported; then it was regarded as a very aggravated form of the foot-and-mouth disease; then it became enteric typhoid disease; then cholera in association with enteric typhus. Now some one professes to have discovered that it is smallpox; and vaccination is recommended as the only grand cure-all and prevent-all, while others pooh! pooh! the smallpox discovery and declare the malady to be scarlatina. What the disease will next become, or what it will ultimately become, it is impossible to guess. The Norfolk men engaged in the investigation of the disease shaved the cattle, and discovered, they tell us, an exanthem upon the skin of the cattle diseased, when, finding that all his patient's died, he suddenly skedaddled to the intense disgust of his friends and the intense amusement of his enemies.

Methods of treatment wide as the poles in their nature have been advocated with an intensity equalled only by their absurdity. Mr. McDougall believed all that the cattle required was to thoroughly disinfect them, so he washed their skins with his powder, drenched and glystered them; but they have continued to die notwithstanding, Mr. Crace Calvert, the eminent chemist, suddenly professed to discover a new power in carbolic acid, and the cow-houses from John o'Groat's to the Land's End stink with its fumes. The malady refuses to be charmed away by chloroform or chlorodyne; but amid the clamour of the doctors and the destruction to our stocks by

the disease, it is pleasant to bring order out of chaos, and the observations which have been made and the facts which are established respecting it. The following conclusions may be considered as established:

1. "The cause of the cattle plague is something specific."
2. "It is inoculable, contagious, and may be rapidly communicated from one animal to another."
3. "It is a blood disease, allied in its nature to the exanthemata, having a period of inoculation, running a course parallel to that of other exanthematous diseases, such as scarlatina."
4. "That the symptoms, as a whole, are quite characteristic."
5. "That the *post-mortem* appearances are peculiar in their kind and degree, as well as in the numerous centres of the diseased manifestations."
6. "That the principal effects of the virus are mainly upon the mucous membranes."
7. "That the morbid appearances may vary within certain limits, or be almost entirely wanting; and that the local lesions are in themselves insufficient to account for death, irrespective of an altered condition of the blood."

From the report of the Medical Committee to the Norfolk Cattle Association it would appear that "the disease is communicable from ox to ox, from sheep to sheep, and between these two classes of animals by mere association; and it is inoculable from sheep to bullocks and to each other respectively. A goat herded with diseased oxen took the malady and died. The inoculation varied from seven to twenty-one days, when produced by causes of infection; when produced by inoculation, it varied from four to eight days."

"The disease in sheep they found identical in nature with that of bullocks, but was milder in type, and somewhat modified as to its *post-mortem* appearances."*

With regard to the treatment of the disease, I have little or nothing at present to lay before you. As a body, we are sneered at by the medical journals, and paragraphs have been written against us in the public papers because we have not made a larger per-centage of cures; but, gentlemen, we have innumerable difficulties to contend against, difficulties many of which appear insuperable, and of a character of which the human surgeon is entirely ignorant, such as sanitary arrangements which are grossly defective in every essential on the part of numbers who own stock; the gross want in numerous instances of even the most common attention in the separation of the sick from the healthy, or the absolute impossibility of doing this; also the proneness of uumerous stockholders to quack and interfere with our treatment in every way conceivable; the difficulty in the majority of instances of procuring proper clothing and food; all these, and many other obstacles of a like character, are constantly being presented, so that, if we do not perform miracles, we are regarded as useless, and looked upon with contempt.

* *Medical Times and Gazette*, Dec. 30th, 1865.

Before it can be known what per-centage of diseased animals are curable by medicine it is necessary to know what would be the average recoveries if left without medicine. We are totally ignorant of such a result, and, I may add, of many other essentials respecting this most mysterious and most direful malady.

ON THE ART OF SHOEING HORSES, AND ITS RELATION TO THE VETERINARY ART.—The last topic I shall treat upon is the art of shoeing horses, and its relation to the veterinary surgeon. I take up this branch of our subject because others have alluded to it in a way which I am satisfied is not only erroneous, but calculated to have an injurious effect in what I consider is strictly cognate to the perfection of the power of a veterinary surgeon in the practice of his art.

I contend that a veterinary surgeon cannot become a thorough workman at practice unless he owns a shoeing-forge. I do not assert that the mere owning of a forge will necessarily make perfect a veterinary surgeon as a practitioner, because he may own a shoeing-forge and be ignorant of almost everything he ought to know; but I state most emphatically he cannot become a thorough master of practice without he has owned or does own, or has been or is in association with, a shoeing-forge.

We are told that veterinary medicine and the art of horseshoeing are no more connected than human surgery is with the making of shoes for human beings. I am perfectly aware that an ingenious reasoner could make a display with an argument of this kind, but, after all, it would only *be* a display. The analogy between the two is very slight; in fact, the only clear ground of similarity is this—*they are used to protect the feet*—the iron shoe to protect the foot of the horse, the leather shoe that of the human being; beyond this the analogy ceases, and the argument is worthless.

In large towns like Manchester it is a matter of paramount necessity that a veterinary surgeon should be constantly associated with a shoeing-forge. In the first place, a large per-centage of our practical skill is required in the treatment of injuries and maladies confined to the feet, and arising from causes of a very simple nature, such as undue pressure of the shoe upon the heels and quarters of feet, especially such as are flat and associated with low weak heels; lodgment of nail-stumps in the wall of the foot, causing mischief by undue pressure; stabs and pricks with nails within the sensitive tissues of the foot; placing the shoe awry; undue pressure of the nails upon the vascular laminæ; undue pressure of the clips upon the toe and sides of the foot; undue tightness of the nails; undue pressure of the shoe upon the sole of the foot, especially with flat-soled horses; using shoes that are too heavy or that are too light and deficient of cover; breaking of shoes and pressure of the broken pieces upon the sole; violent tearing and twisting of the shoes from the feet while the horse is at work, and afterwards placing the exposed feet upon the exposed

nails; treads and overreaches; severe punctures and injuries to the coronet; punctures and injuries to the sole with broken pieces of iron, rusty nails, glass, and sharp pieces of flint or stone.

Such are a few of the almost innumerable forms of injury and disease regularly presented to us in a town like Manchester. Perhaps I may be told that a veterinary surgeon is capable of treating such abnormalities without being saddled with the ownership of a shoeing-forge. Granted; but he never will learn to treat them either with that certainty or facility he would if associated with a shoeing-forge. Associated with a shoeing-forge, where business is brisk, he is day after day in close contact with these things; familiarity with feet, nails, and horseshoes, gradually endow the man with a new sense, which only the possession of a forge can bestow; and bear in mind, gentlemen, it is the obtainment of this sense, the possession, so to speak, of eye and brain within the fingers, which perfects the veterinary surgeon in the practice of his profession, and renders him of that high value to society and the equine creation around.

I beg for a moment to direct your attention to another feature of this question. The veterinary surgeon, when stood upon ground relating to the diseases of the feet and the shoeing of horses, stands upon ground entirely his own; here he is *not* indebted to the surgeon, neither can the surgeon bestow much, so that if we separate him from the shoeing-forge we are removing him, so to speak, from his own property, and placing him wholly upon ground upon which he can never do otherwise than play a subordinate part.

The proper way, however, to regard this question is in its relation to commerce, and to the health and comfort of the animal whose welfare we are met to consider.

The foot of the horse is one of the most beautiful and wondrous organs the mind of man can contemplate, and the only structure at all analogous to it in ourselves is the extremity of a toe or a finger. Now, the value and importance of the horse to the commerce of the world is almost beyond calculation; and when we reflect that this high value to commerce and the health and comfort of the animal itself entirely depend upon the integrity of the foot, should we, I ask, be acting in accordance with our mission in the world to leave the shoeing and general management of an organ of such vast importance to the mere skill of an unlettered shoeing-smith—of a man who is all but entirely ignorant of the complex and marvellous structure he operates upon? Or shall we say the foot of the horse is an organ which requires the educated eye and active supervision of a thoroughly practical and scientific veterinary surgeon? Gentlemen, the common-sense answer to this question is plain. *It is the province of the veterinary surgeon to be associated with the shoeing-forge.* The argument of the sugeon and the boot-making business is fairly met. It is clear the possession of a shoeing-forge perfects the veterinary surgeon as a practitioner; but who will assert that selling shoes or cobbling boots would aid in perfecting the great practical skill of men like Professor Fer-

gusson, of London, or Professor of Syme, of Edinburgh, or would at any time have aided them to acquire such high skill?

In one respect, the possession of a shoeing-forge by a veterinarian is at times both annoying and troublesome to a degree. I allude to the intemperate habits and uneducated condition of the men engaged in the performance of its more active duties; and the question arises, how are we to remedy these defects?

Greater skill is required in the practice of the art. The importance of the horse to society, and the difficulties which beset the shoeing of the animal, alike call for higher skill and education on the part of the shoeing-smith.

The business, considered merely as such. is certainly one of the best and most certain to which a youth can be apprenticed; the occupation is one worthy of the highest mechanical skill; it cannot be taken out of the hands of the skilful workman. Horseshoes can be readily made by machinery, but machinery will never be used to nail them to the living foot. The advancement of the shoeing-smith is a question, then, worthy of our earnest consideration. A scheme might be readily devised to enable the smith to gain a knowledge of the anatomy and physiology of the foot of the horse, and of the principles and practice of horseshoeing. A course of instruction might be given, at the end of which the workman should present himself for examination; and if the answers given, and certain work done at the time, were of a nature to prove the candidate understood his business, a certificate signed by the examiners should be awarded. This, if honestly carried out, would ultimately prove highly beneficial to society, the certificate being a guarantee that its possessor understood something of the art, while the continuation of the practice would slowly but surely raise the character and position of the workman in the social scale.

In desiring to elevate and better educate the shoeing-smith by the plan proposed we are not without one or two striking precedents in its favour. Seventy-four years ago the first English veterinary school was opened to elevate and better educate a class of men whose position at that time was no better than the position of the shoeing-smith of the present, and with what result you all know; while long subsequently, the Pharmaceutical Society of Great Britain has been established to raise the character, intelligence, and standing of the druggist, and the result in this instance is said to be highly satisfactory. We need not, then, regard the plan with doubt or suspicion. By its adoption good to all whom it may concern would ultimately result. If carried out, gentlemen, depend upon it less intemperance would prevail amongst the men who work in our forges, while strikes amongst them would become events *only* of the shadowy past. We are in duty bound, gentlemen, to aid in the removal of all obstacles which impede the progress of our profession, and the evils I speak of are of this nature. It is not for us in such cases to question our responsibility, but to place our strength against the obstacles, and to labour without ceasing until their existence is but a matter of history.

I cannot conclude without a few observations respecting veterinary medical associations. An indifference, to say the least of it, to their welfare possesses many of our body; numbers of veterinary surgeons keep aloof from the movement, while others who join our ranks are scarcely lukewarm in the good cause. Does this arise from timidity, or from a mental torpor which is alike deplorable to themselves and to the progress of the profession? The advantages to be derived from professional association are incalculable—*we gain new ideas;* and whether we regard their value to ourselves intellectually and morally or in a commercial sense (which is a low sense), it is still a matter of surprise that such torpor should exist. If we regard their acquisition in the latter sense, every new idea is simply a fresh aid to professional advancement or a new vein of wealth to the possessor.

"The progress of every man," says Emerson, "is through a succession of teachers;" and filled with vain weakness is he who will not, and poor is he who cannot, impart to his professional brethren—*an idea.*"

The Members held their fourteenth quarterly meeting in the Royal Institution.

Mr. Haycock, President, in the chair. Present, Mr. Thos. Greaves, Mr. John Greaves, Mr. Peter Taylor, Mr. Lawson, Mr. Thos. Taylor, Mr. Buckley, Mr. Howell, Mr. Morgan, Mr. Briddon, Mr. Whittle, Mr. James Taylor, Mr. Gibson, Mr. Sept. Lambert, and Mr. W. Taylor of Stockport.

The Secretary read the minutes of the last meeting, which were duly confirmed—afterwards the rules of the Society were read —*Mr. Peter Taylor* proposed that the rules be revised and printed; also that at the next meeting he would bring forward a motion that the Secretary be expected to render an annual statement of accounts of the Society.

Mr. Thos. Taylor nominated Mr. Sept. Lambert as a Member of the Association.

The President then called upon the essayist, Mr. Thos. Taylor, for his paper on the Diseases in the Eye of the Horse, which was listened to with marked interest and elicited an animated discussion, after which *Mr. Thos. Greaves* complimented the essayist upon the practical character of his paper.

Mr. Peter Taylor proposed a vote of thanks to the essayist, seconded by *Mr. Morgan.* After the usual compliments the meeting terminated.

James Haslan, *Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

CANCER OR CARCINOMA.

(*Continued from* p. 248.)

The scirrhous stage.—As has been stated above, the tumour of scirrhus is hard, unyielding, unequal in outline, and not distinctly defined; colour light gray, and when cut into thin slices semi-transparent. Upon close inspection it is found to consist of two distinct substances, the one organized, the other soft and inorganic; the former superabounding, and made up of the proper tissue of the part, in a state of induration and enlargement, giving it the appearance of septa, varying in form, size, and colour, generally pale and opaque, and disposed in various directions, sometimes forming a comparatively solid mass, sometimes lobulated, thus designated *pancreatic* scirrhus; sometimes disseminated uniformly through the tissues of an organ, and converting it into a solid substance, resembling raw or boiled pork, hence called by the French *lardaceous;* sometimes it has the appearance of firm jelly collected into masses of greater or less bulk in a number of cells, thus called *gelatiniform* cancer.

The more these formations partake of the fibrous nature the less rapid they are in their growth, and the less is the productive tendency shown by them. The mass itself is hardest in the centre, forming a kind of nucleus, and its circumference is sometimes very clearly defined by the termination of red vessels, producing a vascular boundary.

The soft portion of the tumour is sometimes semi-transparent, bluish in colour, and having the appearance of softened glue; sometimes more opaque, softer, oleaginous at times, and of the colour and consistence of cream; it is contained in the meshes or cells of the hard substance, and is apparently a morbid exudation or secretion poured out by the vessels of the organized part, perhaps accumulated and altered by the disease existing in those structures.

The proportion of the hard and soft substances, and their mode of distribution, vary in different scirrhous tumours; this may be accounted for by the difference in the textures attacked, and also to temperament, local irritation, and various other circumstances. If the enunciation of schirrous cancer above given be correct, the organized part may be looked upon as the result of an altered state of nutrition in the seat of disease, and the inorganized as proceeding from a morbid secretion of the parts, the whole being induced by a deranged state of both the nutritive and secretive functions, in consequence, probably, of altered vital influence exerted by the ganglial nerves in the capillaries of the part.

Cysts are sometimes formed within the tumour, varying in size, and containing a reddish-brown or chocolate-coloured fluid; they are lined by a smooth membrane, from which fungi sometimes

spring up. The scirrhous mass sometimes, instead of becoming carcinomatous, undergoes a different change, and is converted into a cartilaginous tumour, having calcareous matter deposited in its interior.

The approach of cancer is insidious, as for some time the part affected by it undergoes but little change, except in an increase of volume and density; and in glands it is apparently inseparably connected with the proper tissues of the organ.

Carcinomatous or cancerous stage.—Although scirrhus may remain stationary, or nearly so, for some time, it generally undergoes a change in its structure and consequences, and makes rapid progress. The change is as follows:—The mass begins to soften, and passes into a state of unhealthy suppuration and ulceration, at least as respects the character and progress of these processes and their consequences upon the frame.

The soft substance becomes converted into a thin ichorous matter, followed by disorganization, which usually commences in the centre of the mass, and extends either to an external outlet or to some of the natural internal ones; if to an external one, a small aperture gives exit to the confined fluids, which have a peculiarly fetid and disagreeable odour.

When this change takes place its progress is very rapid, contaminating the adjoining structures by the morbid secretion of the ulcerated part, a portion of which sometimes becomes absorbed, vitiating the whole system, especially the lymphatic system of organs, and if in the neighbourhood of important bodies destroys them, producing characteristic symptoms.

If no important parts are involved the ulcerative process may continue for some time without destroying the life of the animal, but eventually, by the morbid sensibility set up in the system, the powers of life sink, and the patient becomes a speedy victim to its ravages.

Instead of the change above described, another, and not so fatal in its consequences, occurs in some structures and constitutions. The skin covering the tumour ulcerates; a fungus of a cauliflower appearance and hard grisly structure sometimes proceeds from the surface of the mass, in some instances the ulceration destroying both fungus and tumour, in others remaining stationary for a long time.

The ulceration of cancer is characterised by a thick, soft, jagged edge, which is turned outwards. Colour grayish or livid brown, elevated into loose fungous vegetations, and discharging a fetid corroding sanies or ichor, and bleeding slightly upon irritation.

This ulceration must be distinguished from that of chronic inflammation by the absence in the latter of the fetid corroding ichor, its edges being harder and turned inwards, and by the difference in the colour.

Diagnosis of Cancer.—This is of great importance, as it is liable to be mistaken for the simple induration produced by chronic inflammation; in the latter the parts retain more of their original

structure, are less indurated, and less lobulated and frequently surrounded with infiltrated serum. The latter also admits of resolution, and entirely disappears. Cancer may be also mistaken for tuberculous and other deposits, and may be distinguished from them by the fact of scirrhus never being found isolated in the cellular tissue or parenchyma of organs, like small rounded tumours, as the tubercular formations are, and not in largely diffused masses as other substances. Scirrhus, too, does not greatly increase the volume of the parts affected, neither is it susceptible of the same kind of softening.

Causes of Cancer.—This disease, like scrofula and other maladies of the same character, is undoubtedly of a specific or constitutional nature, hence it is hereditary, and more particularly in the human subject is this shown; I have seen it particularly marked in some breeds of cattle, as in the old smoky-faced Montgomeryshire and other herds of a distinct breed, especially where the system of breeding in and in has been carried on.

This original or acquired cancerous diathesis in the system requires only some exciting cause to give rise to its development, and this is generally to be found in blows and other external injuries, low and poor diet, &c. The researches of pathologists have shown that it cannot originate without a predisposition in the system to it, neither will the matter of cancer produce the disease in another person.

The *proximate cause* of this dreadful disease is extremely obscure, and, as a consequence, many theories regarding it have been promulgated, some imputing it to a deprivation of the nervous fluid, others to a hydatid, others to a sub-inflammatory state of the vessels, and others to lesions of nutrition and secretion, which arrive at their termination in ulceration, &c.

The more correct view seems to be that held by British pathologists, viz., that it is essentially dependent upon a weak and morbid state of the system generally, and deprivation of the vital conditions of the parts affected, whereby the nutrition, nervous sensibility, and secreting functions, become specifically changed, and all the fluids and solids ultimately contaminated.

Having given the physiology, pathology, causes, &c., of scirrhous or carcinomatous cancer, I will now proceed to relate individual cases in different animals that have come under my notice, and particularise the treatment had recourse to in each case.

Case of Cancer in the Cellular Tissue of the Œsophagus in a Heifer.

The subject of the above case was a year and three or four months old, of the smoky-faced Montgomeryshire breed, the property of J. Heywood, Esq., of Crosswood, near Welshpool. My attention was first directed to her on the 31st of May, 1865, when she appeared to be suffering from a little cold, accompanied with derangement of the digestive organs, which, by the aid of a little

tonic and alterative medicine, was apparently removed, and she seemed to have regained her usual health.

On the 14th June I was again requested to look at her, the attendant stating that she had been making attempts to vomit, and had succeeded once or twice; there was also a quantity of frothy mucus in the mouth, which, I omitted to mention, was also present at the outset of the affection. The pulse was quick and weak; breathing rather hurried; mucous membranes injected; bowels very costive; slight tympanitis; occasional attempts to vomit, and a discharge of mucus and saliva from mouth; appetite good, and spirits high. I administered a strong dose of purging and sedative medicine, and applied a strong counter-irritant to region of stomachs, and ordered more cathartic medicine to be given in the evening if no alteration took place.

15th.—She was somewhat worse; bowels more costive; attempts to vomit more frequent; stomach more tympanitic, and a strange tendency, when allowed to go into an adjoining field, to seek out any dirty water and drink it. On percussing the rumen a peculiar metallic click was heard. Everything that she swallowed, or that was given to her in the form of drench, was returned in the course of a short time. I then had recourse to tapping the rumen, and introducing medicines through the canula. This not having the desired effect, I passed the probang, which appeared to go down the œsophagus with little difficulty into the stomach, and administered more cathartic medicine, followed up by hydrocyanic acid, trisnitrate of bismuth, carbolic acid, creasote, and several other remedies alternately; repeated the counter-irritation to the stomach, &c., but all to no purpose. I now gave my opinion that the animal had swallowed some foreign body, which had probably penetrated the œsophagean pillars or the reticulum, causing obstruction to the onward passage of the food, or otherwise she had eaten a quantity of indigestible matter, which had accumulated into a hard mass in the stomach. Expressed my determination to perform rumenotomy on the morrow if no improvement.

16th.—Worse, and on passing the probang into the stomach I observed that at about three fourths the length of the œsophagus there was an obstruction offered to it, but on manipulating the probang it passed on. I also observed a peculiar fetid odour on the withdrawal of the instrument. I now told the owner that in all probability there was a tumour in the course of the œsophagus, and all further treatment would be hopeless.

On the 18th she died.

The *post-mortem* revealed a cancerous tumour, situated partially around the œsophagus, principally on the left side, jnst where the œsophagus passes over the divisions of the bronchiæ, and, in fact, adherent to the trachea; it had passed into the carcinomatous stage (hence the unpleasant smell on the introduction of the probang), and from its pressure had given rise to absorption of the outer walls of the œsophagus for the space of two or three inches, the probang having passed through the attenuated portion. I have

preserved the specimen, and beg to submit it to your notice. The intestines and stomachs were healthy, the aliment in the rumen, however, being rolled up by the action of that organ into several hard masses.

Cancer of the Face in Cattle.

This is, in some instances, a formidable and intractable disease, as no remedies, when it once commences to grow, will arrest its progress, except direct extirpation, and then, perhaps, we find ourselves baffled by a reappearance of it in the course of a short time. It presents itself at first as a small tumour situated on the side of the face, usually about opposite the upper edge of the inferior maxillary bone, and about its centre lengthways, and sometimes about opposite the angle of the lower jaw. After a time it becomes lobulated on its exterior, and gradually extends, involving all the adjacent structures, and sometimes destroying the parotid gland. It then ulcerates through the skin, and discharges a quantity of fetid ichorous matter.

Treatment.—If the attention of the practitioner is called to it early the best plan is to excise it, and freely apply the actual cautery; all treatment, as blisters, iodine, &c., are seldom of any avail; they may retard its growth for a time, but it is sure to extend in a short period. If our attention is directed to it in the later stages the best plan is to advise the owner to fatten it as quickly as possible, for if we commence cutting we do not know where we shall finish; even after it is removed it is liable to be quickly reproduced. I call to mind one case which I assisted my stepfather, Mr. Kettle, of Market Drayton, to operate upon, in the spring of last year, where the whole of the side of the face was involved, including the eye. After cutting away an immense quantity of the diseased substance we found that it still extended, and we had laid bare the inferior maxillary bone, and moreover had severed one of the large branches of the jugular vein. The hæmorrhage obliged us to desist, and the animal died a short time afterwards, her lungs, Mr. Kettle tells me, subsequently becoming affected.

Cancer of the Penis.

This affection prevails most frequently in the ox, usually occurring about an inch or two from the end of the organ on its side; occasionally at the extreme point it presents the appearance of a large wart of a livid colour, nodulated in its surface, and discharging a fetid ichorous pus, best seen when the penis is protruded; frequently grows to a very large size, interfering with the act of copulation, rendering the bull useless. The exciting cause of this affection, in the majority of instances, is injury produced either by a blow or during the copulation.

Treatment.—The animal must be cast and placed straight on his back, and then by manipulation the penis must be gently forced from the sheath and secured by an assistant; the tumour may now be removed in several ways; some prefer excising it, applying the

actual cautery to its surface freely. But it will frequently recur after this treatment. The best method of removal, according to my own experience, is by the aid of a caustic ligature. I think the more we avoid bleeding in the removal of these tumours the less likely they are to recur. Occasionally great difficulty will be experienced in withdrawing the penis by manipulation. Sexual desire must then be excited by showing the animal a cow, when it will be immediately protruded, and must be seized upon by an assistant. Where the disease shows an inclination to return, the animal had better be fattened as quickly as possible, and slaughtered.

I have never seen a case of this sort in the horse, but I doubt not such cases do occur, and the same treatment would be applicable. In extreme cases amputation would be necessary.

Cancer of the Vagina.

This, like the foregoing, is, I think, more often found in the cow than the mare. It presents itself as a hardened tumour, situated a little way in the interior of the vagina, underneath the mucous membrane, and may remain in that position for a considerable period without attracting notice, until it passes into the cancerous stage, when it will be evidenced by the characteristic discharge of cancer, accompanied with occasional straining and, in some instances, loss of appetite and a decrease in the lactiferous secretions. In these cases excision is the only remedy likely to prove of any avail, and this in some instances fails to accomplish the desired end, as from its reproductive tendency it will eventually return.

Fungus Hæmatoides

May be looked upon as cancerous in its nature, affecting a number of cattle (generally young ones) at the same time.

It resembles in its nature canker in the foot of the horse, and shows itself as fungous excrescences from the surface of the membrana nictitans of the eye. Low and bad keep and exposure are the most frequent causes of it.

Treatment.—It is not quite so intractable in its nature as forms of the disease, as it can, as a rule, be easily removed with some caustic application, as a solution of sulphate or chloride of zinc or nitrate of silver.

Whilst treating upon the subject of fungus hæmatoides I may as well allude to the cancerous tumour sometimes seen in the eye, or rather its appendages, of cattle. They are usually located in the membrana nictitans or on the eyelid, protruding from underneath the conjunctiva, or from the edges of the eyelids; at first they are scarely perceptible, but after a time grow very rapidly, sometimes attaining such a size as to produce blindness.

Remedial measures are seldom of any avail here, although the growths may sometimes be kept in check with any strong caustic, the chloride of zinc being the most preferable; as a rule, it is better to advise the owner to fatten the animal and slaughter it.

Otorrhœa, or Canker in the Ear of the Dog.

Though scarcely coming under the definition of "cancerous affections," nevertheless occasionally it extends itself over the face, and assumes a cancerous appearance, hence I have given it a place here.

Essentially it is an ulcerative disease of the internal parts of the ear; sometimes, however, it attacks only the edges of the organ, and destroys a portion of the cartilage. It is, in the majority of cases, produced by over-stimulating food, want of exercise, thus giving rise to the formation of too great a quantity of blood. Water dogs are also very subject to it, from the ingress of water to the interior of the ear.

Symptoms.—The animal is observed to stratch his ear frequently, and shake the head; and on looking into the organ a dark red granular appearance is observed, from dried extravasated blood, which, if not attended to, will pass into ulceration, when the inside of the ear is filled with purulent matter. The animal is constantly shaking the head, and on pressure to the root the pus crackles and much tenderness is evinced.

In long-standing cases the auditory canal becomes closed, and the hearing is lost.

Treatment.—In gross habits constitutional remedies must be had recourse to, as alterative medicine, regulation of the diet, exercise, &c.; occasional bloodletting is also beneficial, also pure air. If produced by the action of water keep the animal away from it for a time. External applications are also essential, and in mild cases are all that is necessary. In the early stages a simple solution of acetate of lead, a drachm to eight ounces of rain or rose water, will suffice, applied night and morning, warm, pressing the ear to ensure its entrance into the cavities. In more obstinate cases sulphate of zinc may be had recourse to, nitrate of silver, corrosive sublimate, &c., and sometimes a seton in the poll may be necessary. In vol. ii of the 'Vet. Med. Record,' p. 147, Mr. G. T. Brown recommends the use of iodide of potassium externally, in the proportion of six grains to the ounce of water, syringed into the ear daily; internally, in grain doses daily. In canker of the flap of the ear a solution of nitrate of siver will often effect a cure. Excision of the cartilage some distance below the part affected and the actual cautery are sometimes necessary. In all cases the ears should be confined to the head by the aid of a skull-cap, and in fat animals constitutional remedies must be had recourse to.

Cancer of the Udder.

Doubtless the females of the majority of our domestic animals are subject to cancer of the udder, but as I have only seen it in the bitch I shall confine my remarks to that animal. The situation of the organ under consideration is very liable to the exciting causes of cancer; from its pendulous and exposed position it is open to

blows, bruises, and other causes likely to favour the formation of the disease; and in breeding bitches the imperfect return of the milk after the young are weaned may also act as an exciting cause.

One division of the udder alone may be attacked with the disease, or several of them. The formation of the tumour is very tardy, and after having attained a certain size the skin covering its surface ulcerates, producing the characteristic appearance and discharge of cancer; and if the substance of it be cut into, it will in most instances be found encysted and filled with cancerous material; it is usually found in old bitches, and, if not relieved, gradually destroys life by the morbid irritation set up in the system.

Treatment.—The treatment of cancer of the udder is simple and decisive; it is useless to attempt its removal by any external applications or internal remedies. The animal should be firmly secured, chloroform administered to it, and every particle of the cancerous mass carefully dissected out, leaving as much of the skin as possible. Hæmorrhage must be prepared for, as the tumours are usually largely supplied with blood. The after-treatment is very simple—keep the parts clean, and apply a simple lotion to allay irritation, and it will quickly heal.

Cancer of the Anus

Is not of frequent occurrence, and is usually associated with cancer of the tail. It is very intractable, as it is in a difficult situation to remove, and is occasionally connected with the pelvis. Its presence would be shown by the animal straining after the evacuation of the fæces, the presence of cancerous discharge, and by examination per rectum. The exciting cause in the cow or mare would most probably be from injuries received during parturition; in the male animal, from external injuries, as blows over the region of the pelvis, or by the attendant rudely forcing the handle of the pitchfork up the rectum, either by accident or intentionally. The straining induced by a constipated state of the bowels would also probably act as an exciting cause.

Treatment, from its position, can be of little avail, unless it is in close proximity to the anal opening, when it may be removed by excision. If the animal is not a valuable one, it is more humane to destroy it; if an ox or a cow, the quicker it is prepared for the butcher the better.

Canker in the Foot of the Horse.

After the late elaborate paper in the *Veterinarian* by Mr. Greaves, of Manchester, and the expectation of an essay on the subject by Mr. Haycock, it is almost superfluous for me to include it in the present production; but as I have thought it probable there may be some here prepared for a discussion on the subject, which would be beneficial to all, I have given it sufficient consideration to favour that object.

Canker of the foot of the horse scarcely comes under the denomination of cancerous productions, although in its tendencies, growth, results, &c., it somewhat resembles them. It is a malignant

disease of a fungoid nature, attacking the soft parts of the underneath surface of the foot, particularly the sensitive frog and sole, giving those parts the appearance of their papillæ, being enormously enlarged, and exuding a thin and extremely offensive discharge, as though they had suddenly become filled up with all the effete fluids of the lymphatic system, and, to get rid of their contents, burst, and allowed the fluids to run away. It certainly affords an interesting study to seek to know how a portion of the animal body can become so corrupted and altered in its nature as to give exit to a discharge having such a fetid and disagreeable smell as that which characterises the ichor of canker. To my mind this study inevitably leads to the conclusion that it is not due to local circumstances alone, but that it must also be due to some peculiar constitutional influence. I do not go so far as to say that it is hereditary in its tendencies, but I do hold that, unless the constitution of the animal was in a state favorable to its development, it could not arise spontaneously as a local affection. I think we may look upon it very much in the same light as the London surgeons do upon a wound inflicted upon the body of a brewer's man, viz., that he thinks himself lucky if the part does not mortify, simply because, by the constant imbibition of large quantities of strong drink, the body is brought into a diseased condition, hence a wound invariably takes a long while to heal or otherwise ends in sphacelus. So with a horse, if the fluids of the body are brought into an unhealthy condition, and the natural attraction, as it were, for each other, lost, a change in the body takes place, and, if not relieved by medicine or otherwise, it must end in some such way as inflammatory œdema, grease, thrush, ascites, &c.; so if an animal whose system is in an unhealthy state should unfortunately become the subject of a wound or other injury to the soft parts, it takes an unhealthy action, which action gradually but surely extends to the parts adjacent, hence the great ravages witnessed in canker of the foot of the horse, and I may also say in foot-rot in sheep.

Exciting causes of Canker.—The exciting causes of canker are rather numerous; sometimes it is produced by the extension of neglected virulent grease, and also thrushes, wounds from shoeing, punctures with nails, pikels, &c.; anything, in fact, which produces a wound in the plantar surface of the foot, in a constitution naturally gross or weakened, or brought into a diseased state by over, irregular, or bad feeding, &c., will be likely to give rise to it; frequently, also, allowing the animal to stand for a long time together with the foot exposed to the action of moisture, when the horn gradually becomes decomposed, and exposes the soft parts to its influence; treads on the heel, suppurating corns, the discharge from quittors, &c., may also act as exciting causes.

Symptoms of Canker.—It is scarcely necessary for me to enumerate these, as anybody who has had horses under their care must at some period have had an opportunity of seeing a horse with canker. They are, however, as follows—Lameness may or may not be present, according to the particular parts affected.

The animal evinces irritation by picking the leg up frequently, stamping, &c., in some instances. At times there is tumefaction, more or less, of the limb. On picking up the foot we find the under surface to present the appearance of a cauliflower partially seeded; long fungoid excrescences growing from its surface, hardened in their nature, and moistened by a thin ichorous discharge, which is constantly exuding from their surfaces, and sometimes having a cheesy-looking substance in their interspaces; it shows a remarkable tendency to spread, and, if not checked, extends over the whole surface of the foot; and, if we remove all the diseased horn, in a few days it will have extended under the edges of the healthy portion.

Treatment of Canker is as varied as the treatment of any disease with which I am acquainted, one party extolling one thing, another something else, and so on, until I question whether there is a drug of an astringent or caustic nature in the Pharmacopœia that has not been employed. In the majority of instances our attention is not directed to these cases until they have gained considerable ground upon us. In the early stages of the disease I should recommend the adoption of mild measures; remove the cause if it can properly be found out; administer alterative and laxative medicine, in order to bring the system into a more healthy state; in conjunction with this remove all the adjacent horn as far as practicable from the diseased parts; apply some caustic agent, the actual cautery or otherwise, to remove all the fungoid excrescence, and then apply three or four times a week an astringent and antiseptic, as chloride of zinc, powdered alum, with sulphate of copper and verdigris, and keep dry by occasionally scattering over it some powdered dry charcoal, and be particular to keep clean. If these measures do not succeed in effecting a cure more stringent ones must be had recourse to, and the old operation of removing the sole appears to be coming again into use, and practised by some very eminent men in the profession; and I need scarcely draw your attention to a paper on the subject in the *Veterinarian* for January, by Mr. Greaves, of Manchester; of its merits or demerits I do not pretend to judge, as I have never tried it.

In conclusion, Mr. President and gentlemen, allow me to say that I am fully aware of there being other forms of carcinomatous cancer, which I have not made mention of; but as the above are all that have come under my own cognizance (with the exception of cancer in the jaw, or rather palate, in cattle), I have avoided bringing them before your notice. Medullary and cerebriform cancer I hope to have the pleasure of hearing treated upon by some other member of the association at a future meeting. I cannot conclude without taking this opportunity of cordially thanking many of my Liverpool brethren for the kindness they have shown to me since my commencement in the neighbourhood. Black sheep there are in every fold; such are best left to their own thoughts, and I must say I hope there are not many in our profession actuated by the same sentiments I heard of being expressed by an old member of it, who,

when asked why he did not attend these meetings, answered that he did not see why he should go there and give a lot of youngsters the benefit of twenty or thirty years' experience and hard work.

Thanking you for the kind attention given to me this evening, and hoping you will excuse all shortcomings,

I remain,

Mr. President and Gentlemen,

Your obliged and humble servant,

THOMAS WALLEY.

A short discussion followed, but so much time having been occupied in discussing the Veterinary Bill that the time for closing the meeting had arrived before the question of cancer could be fully gone into, and the subject being a very extensive one, it was proposed by *Mr. Taylor*, and seconded by *Mr. Brydon*, that the further discussion of the subject be postponed till the next night of meeting, and that the essayist be requested to publish his paper in the *Veterinarian*. This having been agreed to, *Mr. Lucas* proposed, and *Mr. Greaves* seconded, a vote of thanks to the essayist.

After a vote of thanks to the Chairman the meeting broke up.

In the course of the evening Mr. Haycock exhibited a beautiful specimen of a foot affected with "villitis," the disease first described by him, and which will be found in the February number of the *Veterinarian*, page 168. He stated that two years ago the horse was sound and had a good foot; the cause he attributed to hard work on the hard stones.

GEORGE MORGAN,

Hon. Sec.

YORKSHIRE VETERINARY SOCIETY.

THE PRESIDENT'S ADDRESS.

(*Continued from p.* 245.)

THE cattle plague resembles in some degree cholera in the human subject; and as that disease has been before the medical profession for a considerable time, it may not be inopportune to notice the able comments made upon it by intelligent members of our sister profession. "Cholera and its collapse," says Dr. Thomas Wilson, of Hull, "is, I believe, produced by a morbific state of the atmosphere, augmented by overcrowding of cities and dwellings, compelling the inhabitants to breathe an atmosphere surcharged with carbonic acid and putrescent emanations, and deficient in ozone." Dr. Richardson states that "ozone is mixed with the air in minute proportions, viz., one part in about 10,000. It is speedily destroyed in large towns, and with special rapidity in crowded, close, and filthy localities. It gives to oxygen properties which enable it to support life. Its effects are destroyed by great heat. As ozone is

consumed completely in crowded places, and being essential for the removal of decomposing substances and their products, no ventilation or other mechanical measures of a sanitary kind can be fully efficacious unless the air introduced be made active by ozone; that is, it should be fed artificially with ozonized air."

Dr. Carpenter observes, "The continued respiration of an atmosphere charged with the exhalations from the lungs and skin is among the most potent of all the predisposing causes of disease; the presence of even a small per-centage of carbonic acid in the respired air is sufficient to cause a serious diminution in the amount of carbonic acid thrown off and of oxygen absorbed, consequently putrescent substances accumulate in the blood. The atmosphere in which a number of persons have been confined for some time becomes offensive to the smell, from the putrescent exhalations given off from the skin and lungs; this exerts precisely the same influence upon the spread of zymotic diseases, whose propagation seems to depend upon the presence of fermentable matter in the blood, as that which has been produced by the diffusion of a sewer atmosphere through the respired air; the pernicious effect of overcrowding is exerted yet more through its tendency to promote putrescence in the system than through the obstruction it creates to the due elimination of carbonic acid from the blood."

The state of congestion that we witness in the web of a frog's feet, under the influence of chloroform, greatly resembles the congested state of the entire surface of the body in a cholera patient during collapse. I believe that both in the case of the frog and that of the human subject this condition depends on coagulated fibrin in the capillaries; in the case of the cholera subject the coagula having been formed in the first instance in minute vessels of the mucous surface covering the air-cells and bronchial tubes, the poison having entered the circulation of the pulmonary apparatus, and having produced congestion there, the greater or systemic circulation must soon suffer from interruption to the flow of blood through the lungs, and circulate blood that has not undergone the process of arterialization.

From the appearance of a patient in collapse we have reason to believe that the entire capillary system is in a similar state to that observed in the web of the frog's foot. In the blue stage of cholera there is evidence of the blood being completely stagnant in the minute vessels of the skin, the mucous membrane, liver, kidneys, and every secreting or eliminating organ; the lachrymal gland also is implicated, as proved by the fact that cholera patients cannot shed tears. This condition of the surfaces must produce a very marked effect upon the larger blood-vessels.

When the web of the frog's foot has been influenced by chloroform a microscopic examination of it shows the blood-vessels to be increased in diameter by the distension arising from the overcrowding of the globules. These become stationary, probably from fibrinous coagulation. The coagula formed being too large for circulation through the capillaries, and the *vis a tergo* of the heart

being uninterrupted, the vessels become completely gorged with blood-globules, and exudation of the liquor sanguinis necessarily takes place.

If, then, the same congested state exists in the smaller blood-vessels of a cholera patient, and even of some of the larger arteries, as the radial, there being nothing but blood-globules in the smaller vessels of the secreting organs, there being no liquor sanguinis,no motion of the vital fluid, secretions cannot take place.

So large an amount of blood-globules being locked up in the smaller circulating vessels, the larger arteries and veins must be deprived of their usual quantity. This may be proved in the case of the frog under the influence of ether or chloroform, by an examination of the larger mesenteric vessels under the microscope; these are found to contain fewer blood-globules, and the fluid is seen to be much thinner than in the capillary system. This point being established, we may fairly assume that the larger circulating vessels are also distended, by the usual secretions and eliminations being arrested, and that the excess of fluid will have to be disposed of; this is effected by the mucous and other surfaces discharging the serum or watery parts of the blood, as seen in the vomiting of watery fluids and the rice-water evacuations characteristic of cholera.

If the circulation of the blood is arrested in the smaller vessels in cholera decomposition of the blood-globules must soon take place. In collapse the sense of smell enables us always to detect incipient putrefaction. The coldness of the breath and of the body, the deficient oxidation, the blue appearance and great prostration of the nervous system, can all be accounted for by the blood not being decarbonized in the lungs. According to Müller, "When the blood is not decarbonized death soon takes place. In the process of arterialization the blood absorbs oxygen and gives out carbonic acid. The same portion of blood acquires and again loses its arterial properties within the period of a few minutes. It is only while in its arterial state that the blood is capable of maintaining life. The suppression of the change which the blood undergoes in the lungs produces asphyxia and death, chiefly by interrupting the functions of the brain and nervous system. The functions most dependent on the arterial state of the blood are those of the nervous system and animal life generally. The application of a ligature to all the arterial trunks of a limb deprives it of the power of motion, and, at last, of vitality. Sir Astley Cooper has shown that rabbits may be killed instantaneously by pressure upon the vertebral arteries and carotids simultaneously, so as to cut off the supply of arterial blood to the brain."

The vivifying power of the blood existing in the red globules, its non-arterialization in cholera, accounts for the great prostration of the nervous powers. "An animal bled to syncope is not restored by the injection of water, or pure serum, at a temperature of 68° Fahr. into its vessels; but if the blood of another animal of

the same species is used fresh life is infused at every stroke of the piston, until resuscitation is perfect."*

It is fair to presume that the rapidity of death from Asiatic cholera depends on congestion of the circulating fluid, produced, as I have surmised, by some cause acting on the fibrin of the blood, giving rise to its coagulation in the smaller vessels, thus preventing arterialization, causing loss of heat, arrest of secretions, stopping nutrition, and impeding the functions of the brain and nervous system.

It has long been known that certain salts, such as sulphate of soda and nitrate of potash, when added in some quantity to fresh human blood, have the property of preventing its coagulation. This, in some measure, explains the action of salines on the blood in the treatment, allopathically, of inflammation, counteracting the great tendency of the fibrin to accumulate and coagulate in the vessels of inflamed organs and surfaces of membranes.

Carbonate of ammonia is supposed to prevent the coagulation of the blood and retain it in a liquid state. It counteracts all tendency to crudeness, coagulation, or decomposition of the blood; it immediately unites with the animal acids, and then circulates as a saline sedative.

When blood is combined with an ammoniacal salt it acquires a brighter red, which soon passes into a brownish red, does not coagulate, but forms a semifluid cruor.

In 1848-9 Dr. Reil used the liquor ammoniæ with great success in collapse, when other remedies had failed.

Acetic acid readily dissolves fibrin and coagulated albumen.

It is a remarkable fact that, in 1849, the cider districts of Herefordshire, Somersetshire, and part of Devonshire, were to a great extent exempt from the ravages of cholera, while the disease was raging all around. This exemption was confined a good deal to individuals who drank cider as a common beverage. In France and Normandy the same thing was observed in the cider districts. Dr. Tucker suggests vinegar, when cider cannot be obtained, to be taken as a drink in case of an outbreak of cholera; he also shows that acid drinks were not only preventive, but remedial, in epidemic disorders of the bowels. He relates a case of severe cholera cured by the diluted juice of sour apples, and refers to established facts connected with the spread of epidemic dysentery in the army, showing the efficacy of vegetable acids in that disease.

A correspondent in the *Times* suggests the administration of the salts which enter into the composition of the blood, diluted with water, as the most likely cause of cure. In 1854 the plan was adopted in Jamaica by Dr. Tanner. His practice was to administer the salts and water in minute quantities, at intervals of ten or fifteen minutes, for thirty or forty hours, if necessary. He never, it is reported, lost a patient fairly treated in that manner.

During the last visitation of cholera I found great success to

* Müller, op. cit.

follow the enveloping of a patient in a blanket wrung out of a saturated solution of common salt in hot water, to which was added a small quantity of the nitrate of potash, at the same time covering him with a sufficient number of dry blankets to keep up the temperature. The effect on the skin was immediate, changing it from a dark blue to a bright red, and relieving instantaneously the cramps, however severe they had been. The same means used locally to the hands, feet, or stomach, immediately cured the cramp.

Dr. V. Burq, Paris, states that, "in the years 1832-49-54, when the cholera committed sad ravages in France, the workmen who were in continual contact with copper always escaped the malady."

Dr. de Moldini saved the lives of many soldiers in garrison, in Paris, by causing them to wear plates of copper next to the skin, and administering a few drops of salts of copper in solution every morning and evening.

Dr. Raymond, at Gallipoli, adopted the same practice with complete success.

In 1854 Dr. Burq carried about him a diluted solution of sulphate of copper, and administered it in doses of from two to ten drops, in a little sugar and water, with one or two drops of laudanum. He believes copper to be a specific for cholera.

Dr. Ponowsky, of St. Petersburg, recommends powdered hellebore, taken as snuff, as an infallible remedy, if only the patients can be got to sneeze some eight or ten times.

The most approved homœopathic or dynamically acting remedies are camphor, arsenic, cuprum, ipecacuanha, secale cornutum, and veratrum album. In addition to these medicines I am of opinion that means ought to be used to keep the blood in a fluid state; for this purpose salines, ammonia, and acetic acid, are among the best means we can use.

It is necessary to keep up the external temperature of the patient artificially, by stimulating frictions, by the application of heat, and, above all, by enveloping the entire body in hot blankets wrung out of a saturated solution of common salt in hot water, and containing a little nitrate or chlorate of potash, surrounding him also with additional dry blankets, to obviate a certain reduction of heat. The cramps are immediately cured by this plan, and the blueness of the skin is at once changed to a bright pink.

Ice and iced water may be given freely with the chemical blood remedies.

In conclusion, the value of ozone may be inferred by the fact that the blood-corpuscles possess peculiar relations to it, absorbing the allotropic condition of oxygen with considerable energy, parting with it again with equal facility, and acting, therefore, as ozone carriers.

As an average male adult gives off daily nearly fourteen ounces (troy weight) of carbon by the lungs and skin, the necessity of providing an abundant supply of pure air for its free elimination is at once seen; the accumulation of carbonic acid in the blood,

through the stoppage of the capillary circulation, is the cause of the rapidly fatal results in cholera.

The cause producing cholera appears to be some poisonous modification of the atmosphere, acting directly on the blood through the lungs, producing there arrest of circulation in its capillaries.

High land, pure air and water, although not shutting out the cause, appear to reduce its effects to the minimum.

At present the rinderpest is considered to have some relation to smallpox, and, as a natural result, vaccination is the fashion. How far it may be beneficial time will tell. One thing is comfortably assuring, that if the operation is not a certain antidote, no harm is likely to accrue from it; therefore, we may safely assist in giving an impetus to the present impression. We have some able men on its side, and it is never wise to condemn any theory or system without fairly testing its merits by unbiassed reason and reflection and fair experiment.

And now, gentlemen, I will not intrude upon your time any longer. We will now proceed to the discussion of the paper that was read at our last meeting, "On the Comparative Merits of Allopathy and Homœopathy."

Mr. Dray proposed, and *Mr. Freeman* briefly seconded, a vote of thanks to the President for his able address.

The President having returned thanks, called upon the members to enter upon the discussion of his Essay 'On Homœopathy,' read by him at Halifax, October 10th, 1865.

Mr. Williams opened the discussion as follows:

I feel confident, gentlemen, that there can be but one opinion as to the merits of the essay read by our President at our last meeting, viz., that the subject has been most ably and most practically brought before us, and I can heartily say that he is deserving of our thanks for the care and attention he has bestowed on the subject. Coming from such a source, one of the most respected veterinary surgeons in the provinces, and occupying the position of our President, the subject itself is deserving of our most careful attention, and to be discussed with due impartiality. I think that our profession is deserving of the commendation of all truly scientific investigators by its having shown that broad liberality of sentiment, that absence of prejudice, which obtains among human medical practititioners with regard to homœopathy. We have taken no narrow view of the question, and to show our approbation of men having opinions of their own (although we differ from them) we have elected as our President—and the Lancashire society have also elected as their President—professed homœopathists. We have done this because they are earnest workers in the advancement of our art, and independent thinkers, who have not been afraid to express their opinions boldly and honestly, in order that in the end the true system of medicine may be understood.

We must acknowledge that homœopathy has indirectly done much

good. It has caused men to think before they have acted, and by the exercise of thought, and by carefully noting the operations of nature, they have been able to cast off prejudice and all preconceived notions. When they saw that under homœopathy diseases were cured, without the employment of those remedies which were in vogue and were so dear to them, from having descended from their forefathers, they asked themselves the question if there was anything in this system, with its infinitesimal doses; and not being able to conceive that these doses could have any effect in curing diseases they began to think that the operations of nature only required assistance, and that the causes of diseases were to be removed, and not the symptoms treated. But that homœopathy in itself is correct I cannot possibly agree to; nay, I think it is most erroneous, and that, as a system, it only aims at treating symptoms. The expression chosen, we know, is "Similia similibus curantur." Now, for the sake of argument, let us grant this proposition, or that medicines cure diseases the symptoms of which are similar to those produced by the remedies when given in large doses and when the animal is in health—and, for illustration, we will take pneumonia, the symptoms of which you are all acquainted with, such as hurried breathing, quickened pulse, &c.—now, by treating this disease homœopathically, medicines would be given that would, in health and in large doses, produce these very symptoms, and, the homœopathists say, with a certainty of success. We grant, as I said before, for the sake of argument, that this is correct; but, gentlemen, I ask you if these symptoms, singly or collectively, constitute the disease—that peculiar exudative process going on within the diseased part? The answer is apparent, and, therefore, the treatment of symptoms is something very far behind what is required by rational therapeutics. But I will endeavour to prove to you that this proposition is *not* correct, and that homœopathic remedies do not produce symptoms similar to those of the diseases they are stated to cure. I will take aconite, for example, which is the great homœopathic remedy in the first stages of inflammatory disease. Now, what are the symptoms in these first stages? We answer, a quickened pulse and increased respiratory movements. Now, aconite, to come up to the proposition *similia similibus*, should produce symptoms like these; but the contrary is the fact. Neligan says that aconite produces a failure of the circulation; Dr. Fleming, great languor of the pulse, paralysis of the muscles, which terminates in immobility of the chest and diaphragm, and consequent asphyxia. Not inflammation, but the extreme contrary. In medicinal doses in man the pulse falls to 40 in the minute, and another author observes it is an irregular, vanishing pulse, &c. In the horse, in full medicinal doses, we all know the value of this agent; it is a truly sedative medicine, prompt and effectual, reducing the number and force of the disease in inflammatory diseases. I will not multiply instances, but will quote one other remedy, sulphur. The well-known value of sulphur in skin diseases has been seized by the homœopathists, and they state that

this property is due to its being able to produce skin diseases if given in health. But this is merely an assumption. Sulphur cures skin diseases, because it is in a great measure expelled by the skin in the form of SH. This compound, if the disease is due to any form of organic life, destroys the animalculæ, and, by so doing, removes the cause of the disease.

Now, as to the treatment of lamenesses by homœopathy. At our last meeting we had one gentleman from Northampton who stated that ringbones, spavins, and other osseous diseases, were cured by the internal administration of bichloride of mercury, and this because mercury causes disease of the bones when given in large doses. Now, let us ask of ourselves what are the causes of these forms of lameness, and, having discovered them, we shall find that neither spavin nor ringbone is primarily a disease of the bones, but that, as a consequence of some injury, the bones become diseased, and generally the exudation of osseous matter is a process of repair whereby the parts are restored to their natural condition as near as possible. How, then, can mercury cure what is not, in the remotest degree, related even to its said homœopathic results?

We allopathists are blamed for doing a great deal of harm by giving large doses, and thereby interfering with the efforts of nature. I grant that there is much truth in this; but the time has now arrived when men no longer interfere with the natural method of treating and curing diseases, and that rational system of expectant medicine is now better understood and better appreciated, and by this method greater results have been obtained than the most sanguine homœopathists ever thought of.

Mr. Greaves observed—The subject before us is one of great and peculiar importance; indeed, I consider it the great question of the day, and it has been ably and scientifically handled by Mr. McTaggart, who has given us a fresh light by which to judge of the relative merits of hœomopathy and allopathy. I have been taught in the school of allopathy, and have also had some experience in homœopathy, but I have not been able fully to understand it; it is too intricate and abstruse for my comprehension, since it only confounds and mystifies men. About seventeen years ago I had a valuable cart-horse under treatment. It was a case of pleuro-pneumonia. The animal was blowing a good deal, pulse 96, and had been very ill for more than a week. The case looked almost hopeless; I had done everything allopathy could suggest, and apparently all was in vain. At this moment I was advised by my cousin, Mr. John Greaves, of Altrincham, to give my patient ten drops of aconite and ten drops of arsenicum, alternately, every hour, in a small hornful of cold water. I did so, and immediately the symptoms began to improve, and the horse was entirely restored to health in a few days. Soon after this I had numerous opportunities of testing homœopathy further. On one occasion I had eighteen cases at one time in one stable, all under homœopathic treatment. They were all of them cases of influenza-fever. Some

of them were blowing a good deal, the pulse ranging from 60 to 96, and I was giving aconite, arsenicum, bryonia, nux, mercurius, &c., as the cases seemed to me to require. They were all doing as well as the average of these kind of cases generally do, when all at once at midnight I was informed the medicine in one of the bottles was finished, and, not being able to replenish it at that time of the night, I filled the bottle with pure cold water, and ordered the attendant to give it as before. The next morning I found my patients all going on quite as well as I could expect. At this visit I found the other bottle was empty, and I filled this with pure cold water, with instructions to use it as before. I kept a strict watch upon these cases, and, for aught I could see, they all recovered quite as soon, and as completely, as the average of such like cases do under any other treatment. Now, I would ask, what is the inference to be deduced from these two instances? They stand out as two facts of no little importance. There I stood, in the first instance, confronted by a living witness, in which a great mass of disease had subsided, in which a protracted and perverted action had, no doubt, established intense tumefaction, and in the very midst of this organic tumult its process is arrested, and, as if by some magic power, a reverse action is effected, and, in a little time, healthy function resumes its sway; where all was chaos and confusion, now order and regularity prevail. I could only liken it to a kaleidoscope, in which all the molecular aggregations at once fall into their proper and respective places. Now, what I want to know is this—what was the principal or active agent in effecting this great change? Perhaps some of you are ready to say, we are justified in concluding that it was to the homœopathic medicine, to it we are bound to ascribe the result. Well, gentlemen, I endeavoured to solve the problem, and, after many sleepless nights, I gave it up, and it remains unsolved by me to this day. I certainly could not bring my mind to give the homœopathic medicines the full credit. I believe there is a sort of living instinct existing in the tissue itself that overcomes morbid action, and I maintain it is utterly impossible to substitute any medicine in its stead. This influence is not an ethereal essence, it is a demonstrable power. You might just as well tell me that the ends of a fractured bone have become united together through some virtue in the splints and bandages employed. It is as essentially a life act in the one case as in the other, and the utmost medicines can do, whether used allopathically or homœopathically, is to excite or stimulate this vital force to increased activity. If the living instinct is more energetic and more powerful than the morbid action then the living instinct overcomes it, gaining the ascendancy; but to ascribe to some supposed or mysterious virtue in medicine that which is essentially a vital act is, in my opinion, a gigantic fallacy. I, however, believe this—homœopathy has contributed much towards the ultimate discovery of the truth; it has succeeded in establishing this fact, that there is a principle or phenomenon in nature that can restore health wholly independent of any assistance from any

medicinal agent whatever. But what are we to say about the second instance which I have alluded to? There I stood confronted by a number of horses, in many of whom there had been a great amount of disease existing, but which had now altogether subsided. As I before said, a protracted perverted action had established intense tumefaction, and in the very midst of this organic tumult progress is arrested, the disease becomes submissive and acquiesces into a state of repose, a reverse action is effected, and reconstruction and unimpaired health become again ascendant. Now, I ask again, what is the agent or active principle that effected this great change? In the former case you may argue and say that the allopathic treatment had recourse to had produced the result, but in the last instance not one of the cases had had one particle of allopathic medicine. In the former case the homœopathic treatment was begun just as the patient was in the midst of his sufferings, but in the latter cases the homœopathic medicines were discontinued just as the patients were in the midst of their suffering, still they each and all recovered. Now, I maintain, if you ascribe the recovery of the first case to the ten-drop doses of aconite and arsenicum, then I say, by parity of reasoning, you are bound to admit that the recovery of the eighteen must be ascribed to the ten drops of cold water. And I say, if any man will contend seriously that their recovery was entirely dependent upon these remedies, such a man is a fit subject for an inmate of the asylum for idiots.

I do not consider I am out of order or talking nonsense in thus arguing this question. It is right that it should be both properly discussed and properly understood. I cannot, however, let this opportunity pass without raising my voice in favour of sound principles, and at the same time to denounce whatever appears to me unsound in principle. By comparing experience we may gain knowledge and advance science. Limitless desire is a condition of our existence, but, after all, in respect to pathology, I fully admit that the doctrine of allopathy is full of imperfections, and the results full of uncertainties. But then the same objections obtain with equal force and truth to the doctrine of homœopathy. It is not and never can become one of the exact sciences. And I must reiterate what I have frequently urged before, that the laws upon which morbid action is dependent are as yet only very imperfectly understood; and that the practitioners of both theories frequently allow themselves to be deluded by ascribing results to medicine in which medicine had indeed played a very trifling, if even any, part whatever. I would rather ascribe it to some unknown cause, an influence probably exerted through nerve force. And in closing these remarks I must say that my own candid impression is, that neither allopathy nor homœopathy is entitled to half the credit that is usually awarded to them, but that it is to another power, a spontaneous assimilating power, inherent in the system—you may call it vital action, or the power of nature if you like, but depend upon it is to this power, whatever it may be, that you must look to arrest the progress of disease, and effect a reverse action in im-

paired vital tissues. The best thing the veterinary surgeon can do is to study this subtle power closely, to learn how he can stimulate it to increased energy, and how by it to remove all impediments to natural action, being always extremely careful not to thwart it by imperiously assuming an almighty power, and by endeavouring to coerce and command it to change its wise and well-ordered designs. Depend upon it, the more science enlightens mankind, the more closely will man's efforts resemble and emulate nature's processes.

Mr. Haycock said, first of all, in reply to Mr. Williams, that with reference to the treatment of the symptoms of disease, allopathists as well as homœopathists treat only symptoms. As for aconite, its provings are found in homœopathic books; it does produce pneumonia. As for sulphur, it has not been proved to be exhaled by the skin; probably it may, but as probable it may act in another way. As for the treatment of spavin, &c., by corrosive sublimate, this agent does really cure it. It is true he had relieved cases by it after firing had failed, but he must also confess that he had cured it by firing after mercurius had failed. When allopathists institute experiments to test the action of medicines, then must they speak with authority, and not before.

Mr. Dray said—I think Mr. McTaggart, in his essay, does not give veterinary medicine any credit for having made much progress. He has not even acknowledged the fact, but has shown towards it the utmost indifference. To enter fully into the consideration of homœopathy would occupy too much of your time. Mr. McTaggart advances no new claim for his favorite theory, and such statements as he does make have been over and over again refuted, quite to the satisfaction of every conscientious and non-bigoted mind. On which side are the most scientific and original observers —on the side of the allopaths or the homœopaths? How can he claim for the latter more definite knowledge of the action of drugs? The idea is absurd. There can be no doubt that one of the main things by which homœopathy is made to be attractive by a certain class of the community is its pretences of curing by exceeding small doses of drugs. Without going fully into detail, we may state that the essayist fully admits the absurdity of this when he mentions that doses have nothing to do with homœopathy, which, nevertheless, is untrue; and their motto is "Similia similibus curantur," which is also a great fallacy, and has often been proved so. The credit of discovery of this supposed law is given to Hahnemann, who thought it was established because he imagined after taking cinchona bark he experienced symptoms similar to those of ague. Whatever effect the bark had upon Hahnemann, certainly no such effects are produced by it nowadays. One great mistake of homœopathy is that it treats symptoms, and not the disease itself. The author of the essay says he cures vomiting by means which produce vomiting. How, on earth, by such means, would he allay vomiting the result of malignant disease or ulceration of the

stomach, or that resulting from obstruction of the bowels or strangulated hernia? Is not such an opinion preposterous? It is well known the action of drugs varies in different patients; therefore, to carry out what the essayist professes, he would have to administer the drug in a *poisonous dose* to his patient in a state of health to find out its effect upon the same patient in disease. This kind of theory requires no comment. In my humble opinion, if patients recover under homœopathic treatment, they would become convalescent without it—"Vis medicatrix naturæ."

Mr. Horrell, *Mr. Carter*, *Mr. Horne*, and others, said that they had tested homœopathy, but they had no confidence in it.

The President observed that in some cases diffusible stimulants were required, but these must be homœopathic to the symptoms. He was glad there had been such a free discussion, and was quite satisfied that the system of homœopathy was a correct one.

The gentlemen now adjourned to the banqueting-room, to celebrate their second annual dinner.

The usual loyal toasts were given by the *Chairman*.

"The Army, Navy, and Volunteers," was most ably responded to by *Colonel Fitzwygram*.

Mr. Dray then proposed the health of the Hon. Secretary, and presented to him, on behalf of the Society, a very handsome microscope.

A most pleasing duty (Mr. Dray said) has devolved upon me, and I will not weary you with any of those hackneyed expressions of want of ability and inefficiency in doing it, which have been so often resort to *usque ad nauseam*, but endeavour to convey your sentiments with sincerity and without fulsome compliment. I hold that nothing is so essential for the welfare and success of a society or association as an intelligent and indefatigable secretary, and I am quite sure we are much indebted for our present prosperous state to the assiduity and earnestness of our honorary secretary. That is the reason I did myself the pleasure of proposing at our last quarterly meeting, held at Halifax, that a testimonial should be presented to Mr. Williams for his past excellent services, and as a stimulus for future exertions. I was glad the proposition was received with so much cordiality, and has been nobly responded to by almost all the members. In choosing the testimonial the feelings of our secretary were consulted, and, I think, he has shown good taste and judgment in selecting so interesting and instructive an instrument as the microscope, more particularly at this present juncture, when microscopical examinations may lead to the discovery of an antidote to diseases of a direful and malignant character. In the hands of our honorary secretary I am quite sure such an instrument will not only be beneficial to himself, but he will, in unremitting labours, cull the choicest flowers of science, and present them to his professional brethren in all their freshness and odour. I beg, Mr. Williams, you will do us the favour of

accepting this honorarium as a mark of our high esteem and appreciation of your valuable services to this Society. May you continue to be blessed with health and an increase of your professional avocations; may you also long fulfil the duties of our honorary secretary, which you have convinced us you are so eminently qualified to perform.

Mr. Williams, on receiving the testimonial, said—There are, gentlemen, moments in a man's life in which the tongue fails to give expression to the feelings of the heart. Such a moment it is now with me. Your kindness in presenting me with this handsome testimonial, the very warm and feeling manner in which Mr. Dray has made the presentation, and the cordial way in which you have responded, are altogether too much for me. I thank you most sincerely, and shall always remember the present time, when, surrounded by so many valued friends, I have from you received this testimony of your approbation, accompanied with your well-wishes. You have given me this as a mark of your approval of what I have done in connection with this Society. I can most truly and conscientiously say that no man has had his heart more in the work of advancing this Society than myself. Many might have filled my post with more ability, but none with a greater desire to do their best. The success of this Association is a matter most dear to me, and its failure would cause me much regret, for I believe that the onward progress of veterinary association is the only way by which we can make our worth as professional men known to the world. Mons. Bouley said, upon a recent occasion, when reading a paper, upon his mission to England to observe the cattle plague, "that England had no confidence in the veterinary art. Nor was this want of confidence quite unreasonable, for with the exception of a few distinguished men, veterinary science may be said not to exist among our neighbours, owing to the fact that it was left entirely to private enterprise." We must surely be little thought of if one of ourselves thus speaks. But let us endeavour, by the cultivation of science, by the dissemination of knowledge gained, and by earnestness of purpose, that this stigma shall remain upon us no longer.

I would most heartly wish to see us a united body; and this leads me to speak of the intended new Veterinary Bill. I have no hesitation in giving an opinion against that Bill, although to myself it will be no loss. I say let the Royal College of Veterinary Surgeons devise some liberal measure by which men possessing sufficient education may become members within a limited period, and after the expiration of that time go in for a Bill that will be of some service. If such were done the body would then be so strong as to command attention in Parliament. I will say no more. I have waited since our last annual meeting to see if any proposition were made, any alteration in the present laws of the College, whereby those like myself are anxious to enter its portals, but I have waited in vain.

Again expressing to you the deep debt I owe to you for your kindness, in the name of myself, my wife and my children, I thank you from my heart.

The health of the Vice-Presidents was responded to by *Mr. Freeman*, who said—

Gentlemen,—I rise to thank you for your kindness in drinking the health of the Vice-Presidents of the Yorkshire Veterinary Medical Association, a member of which I have the honour to be. It is but little that I can say or do for the advancement of veterinary science; but there is one thing I would say. To it, in the order of Providence, I owe my livelihood, for which I am thankful. Moreover, I know that it has put me in a position which, had I been a tradesman, I never should have been. We, as veterinary surgeons, have access often where others have not, for he is a strange gentleman who does not love a horse; and if his horse be ill, he wants some one to cure it; and if successful, he is respected for his abilities. But, on the other hand, there is a path which is not all silvery. Things will sometimes go wrong, and people will do wrong, as you all know. I have been sometimes sent for when the animal has been dying, and then got the credit of killing it. This is often the case with young practitioners. So that sometimes we are lifted up on high, and other times set down as worthless. But, nevertheless, onward must be our motto. When I sent my sons to the College I told them they were to try and make the cleverest men in the country; not merely get their diplomas, as it were, by the skin of their teeth, but to have an abundant entrance into the veterinary world. Permit me to say that I was much pleased with the inaugural address read by the President of the Lancashire Veterinary Medical Association. There was so much sterling thoroughbred language in it—lessons for the youth, yea, and for those of riper age, too—that I felt myself amply repaid for more than a two hundred miles' ride. It is not merely for myself, but I have two sons, which I should not like to pass as "muffs" through the world, and not only them but others who will have to follow us. You know, gentlemen, "No man liveth to himself." The man who can do the most good in any way is, no doubt, the happiest man. I envy not the man who does not like to see another man getting on in the world. I don't say it is always the most skilful practitioner that makes the most money. There are many things will often be thrown in the way of a young man on his entrance into life, but then there is a particular Providence over each of us, and I do believe that Almighty God helps those who help themselves. Many a young man has nothing to do but to walk into a good practice, which his father had toiled night and day for many a year to make; while another, it may be, has but limited means, and nowhere to place his foot except on what is considered forbidden ground. But never mind, young man, take courage, and go on. One bit of advice I give to my sons is, "Don't be overwise in your own conceit; don't be too ready to say that you can

cure this, that, or the other disease. Say you will do the best you can, and, as punctuality is the life and soul of business, whatever you promise, pay the vow, if it should be at the greatest possible personal inconvenience to you. Be men of truth, men not to be bought at any price. Do as the Wise Man would have us, 'Buy the truth, and sell it not;' and do to all men as we would they should do unto us."

"Prosperity to the Royal College of Veterinary Surgeons" was responded to by *Mr. Greaves.*

"Success to the Veterinary Medical Association" was replied to by *Mr. Haycock.*

During the evening many gentlemen commented upon the new Veterinary Bill, and their sentiments were decidedly unfavorable to that measure as it now stands. It was, indeed, a most suicidal act.

Mr. Greaves, in explanation, stated that it was the best form in which they could obtain a Bill at all.

Col. Fitzwygram and *Mr. Haycock* were of opinion that if, instead of trying for such a measure, the Royal College of Veterinary Surgeons were to compel a proper standard of education in the candidates for the diploma, the profession would soon be in a better position without the further aid of the law.

The next meeting of the Society will be held at Pontefract, in April, when Mr. Broughton, of Leeds, will read a paper.

W. WILLIAMS,
Hon. Secretary.

WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

"RINDERPEST." By Mr. T. D. GREGORY.

(*Continued from p.* 251.)

THE names given to the disease varies in the different countries where it is known; by the Germans, rinderpest; by the French, typhus contagiosus bovum; by the Italians, pestes bovina, &c. It has been well known from time immemorial in the north and east of Europe, where it is said to be indigenous, originating in the interior of the Russian dominions, in the immense level plains of the steppes, where the extremes of climate are most strikingly experienced, and where it is said, "Hundreds of leagues may be traversed east from the Dneiper without variation of scene—a dead level of thin but luxuriant pasture, bounded only by the horizon—so that day after day the same unbroken monotony fatigues the eye. Sometimes there is the appearance of a lake, which vanishes on approach—the phantom of atmospheric refraction. Horses and cattle beyond numbers give some animation to the scene so long as the steppes are green; but winter comes in October, and then the steppes become a tractless field of spotless snow. Fearful storms rage, and the dry snow is driven by the gale with a violence

which neither man nor animal can resist, whilst the sky is unclouded, and the sun shines clear and bright above the earthly turmoil. The contest between spring and winter is long and severe; yet when gentler gales succeed, and the waters run off in torrents through the channels which they cut in the soft ground, the earth is again verdant. The scorching summer's sun is as severe in its consequences in these wild regions as the winter's cold. In June the steppes are parched; no shower falls, nor does a drop of rain or dew refresh the thirsty and rent earth. The sun rises and sets like a globe of fire, and during the day he is obscured by a thick mist from the evaporation. In some seasons the drought is excessive; the air is filled with dust in impalpable powder; the springs become dry, and cattle perish in thousands. Death triumphs over animal and vegetable nature, and desolation tracks the scene to the utmost verge of the horizon's hideous wreck.* In such a country as this, can we feel surprise if disease should find a home? All the causes that can be favorable to the production of such a malady as this can there be found, and, when produced, it is allowed to work its will upon the helpless animals, unchecked by any sanitary or veterinary interference. Separation of the infected from the healthy is not to be thought of, or, if thought of, cannot be practically carried out. It would be fortunate for other countries were its ravages confined to those regions, but, possessing the powers of communicability and contagiousness in the highest possible degree, it is carried by immigrating cattle to other countries. "Trade and war," as an eloquent writer says, "those two inexorable tyrants, are the chief agencies by which it is disseminated." In the course of the ordinary traffic of the country it is spread through various parts of the great Russian empire into Austria, Hungary, and the Danubian Principalities, and the countries lying eastward of it. To the westward, into Prussia and the German states, it seldom extends, by reason of the great dread that is entertained by the governments of those countries—police regulations and military cordons being constantly kept up along their frontiers, to prevent Russian cattle being sent over. Professor Simonds and other authorities say the disease has hardly ever been known to come westward of a line drawn from Memel on the Baltic to Trieste in the Adriatic, unless those police regulations have had to be relaxed, as in the periods when Russia has been at war with any of the countries of Eastern and Western Europe; and that whenever such a calamity has taken place, and the Russian armies have been on the march, so sure has the disease been carried with them, and leaving it in their track along the unfortunate country through which they have passed. Before the eighteenth century it produced great ravages in Western Europe, but not until 1711, according to Renault, a great French authority, had it been much understood. From that date to 1714, a period of three years, the number of cattle lost in Western Europe was estimated at 1,500,000. In Holland alone, during the ten years from 1714 to 1723, the mortality amounted to 200,000. According to Paulet, 3,000,000 succnmbed to it in Central and Western Europe during the eight years from 1740 to 1748. Dr. Faust, in making a summary of all the losses by the disease in Europe, computes them at the enormous number of 200,000,000 during the period of eighty-five years, from 1711 to 1796. Renault says this estimate is within the mark. The ravages it has made since the commencement of the present century have been very great, and almost every outbreak could be clearly traced to the march of armies. It was brought to France, even to the very walls of Paris, by the invading army of 1814. During the Russo-Turkish war in 1827 and 1828 the cattle sent to supply the army carried

* 'Somerville's Geography.'

the murrain with them, and destroyed in Hungary, Galicia, and Moravia (through which they passed), 51,000. During the Polish Insurrection, in the years 1831-32-33 it crossed the Prussian frontier, and swept away in Bromberg a large number. Again, during the passage of the Russian troops from Wallachia by way of Transylvania, in 1849 and 1850, the disease again prevailed in Hungary to a great extent. When the Russian army was sent to occupy the Danubian Principalities the disease quickly showed itself, and from that time it continued down to 1857 following its track, and leaving behind it death and desolation amongst the animals of the ox tribe. It was carried into the midst of the French, English, and Turkish supplies in the Crimea, and extending down into Turkey to the south shore of the Black Sea. In 1862, 296,000 animals were attacked in Austria; and in 1863, 14 per cent. of the whole of the cattle of Hungary were lost. Such is a brief and necessarily imperfect account of the disease as known on the Continent of Europe. It may be said, as far as its history is authenticated, to have almost confined itself to these countries, attributable to the fact of this branch of commerce between Europe and other parts of the world being limited in extent. But at times, when, by the requirements of other countries, cattle have been exported from the diseased districts, the disease has followed. A short account of an outbreak that took place in Egypt, and the sad effects which followed it, may be quoted as an example of others.

According to an official report of Barrot, the French Consul-General at Alexandria, to the French Minister of Foreign Affairs, the Viceroy of Egypt (Mehemet Ali) in 1840 divided the greatest part of that country as an appanage to his children and the chief civil and military functionaries in his government, reserving for himself a large portion; and feeling the importance and necessity of pursuing a more improved system of agriculture, and finding the number of oxen insufficient to carry on the labours, especially the works of irrigation then in progress, agents were sent across to Anatolia and Karamania, as offering the greatest facilities for procuring the necessary supply. Large purchases were made, and the oxen were got together in the towns along the coast, Adana, Tarsor, and Kazanli, for shipment. But before the shipment took place disease showed itself among them, and numbers perished. Those living were embarked; the evil, however, continued on board, and during the passage more perished and were thrown overboard. Those that survived were put on shore at Alexandria, and sent in different directions, carrying with them the disease, and infecting also the native herds in Lower Egypt, the Delta, and penetrating into Upper Egypt, destroying even the buffaloes. It is said that three fifths, at least, of the whole cattle of the country perished, and the use of oxen for agricultural purposes was abandoned in favour of horses, asses, mules, and camels.

The rinderpest, or cattle plague, as it is now called, so far as we have any authentic accounts, first made its appearance in England from the Continent in the year 1712, and again in 1714; but it was not until the year 1745, just one hundred and twenty years ago, that the disease assumed anything like an alarming character. From that time it continued its ravages upon the cattle of this country to a frightful extent, and with unmitigated severity down to 1756, a period of eleven years, in spite of all the means that were then devised to check it. The Government during that period acted upon principles somewhat analogous to those recommended during the last few months, viz., that of destroying the infected animals, and otherwise separating the healthy from the diseased. But compensation was for a time paid to owners of cattle which it was thought expedient to destroy, until, from great impositions being practised, it was

found necessary to withdraw the order. All curative measures were found to be futile, and were discouraged. The prevailing opinions were decidedly in favour of its being an imported disease, yet opinions varied as to how it was brought here. Some persons contended that it was brought from Zealand with some hides; others that the infection came with some calves from Holland. No estimate of the great losses during this visitation can be clearly ascertained, but they must have been enormous, even exceeding those of the present time. According to Youatt, 40,000 died in Nottinghamshire and Leicestershire in the year 1747, and in Cheshire, in about half a year, as many as 30,000.

Its next appearance in our country was in 1769 or 1770, but its continuation was of short duration. In 1777 we hear of it again, having been mentioned in a speech made by the then King George the Third, on the opening of Parliament. But it would appear that, from the knowledge acquired of its nature during the visitation before referred to, and by the advice of Dr. Layard and others, stringent measures were put in force, and the disease soon disappeared, and before any serious mischief had been done by it. From that time to the year 1856 (after the conclusion of the Russian War) we hear nothing of it, when the alarm note was sounded that the disease had appeared at Mecklenburg, and would in all probability visit our country. Our consuls abroad were ordered to collect information and transmit it to our Government; but the accounts did not allay the fears of the public or tend to throw much light upon the nature of the disease. Then it was that the agricultural societies of England, Scotland, and Ireland, conjointly agreed to send out Professor Simonds, to pursue inquiries upon the subject. He was accompanied by Mr. Ernes, a gentleman with whom we are all more or less acquainted, in order, as was observed, to smooth the difficulties of the Continental languages. These gentlemen commenced their inquiries in Belgium; from thence they proceeded to Holland, Westphalia, and Hanover, to Hamburg, Denmark and its principalities, on to Berlin; but finding the whole of these countries uninfected, they were advised to go on through Silesia into Austria, where at length they succeeded in overtaking the disease, and were allowed ample opportunities of studying it in all its stages, as well as ascertaining the measures which were adopted in those countries to check and exterminate it. Their whole proceedings were embodied in an excellent report, published after their return in 1857, a copy of which report should be in the hands of every member of the profession. It is sufficient for our purpose to state that the disease did not, as it was anticipated, at that time reach our shores.

The particulars of the outbreak of the disease of the present year, and the progress it has since made in our country, must be so familiar to you all that it requires but little comment from me. There are, I believe, still grave doubts existing in the minds of some persons as to how, and in what manner, it was introduced here, they still holding tenaciously to the opinion that its origin was spontaneous, arising from a combination of causes, said to be in existence during the last summer—*e.g.* a long drought, coupled with an unusually high degree of temperature and a peculiar electrical condition of atmosphere, acting upon animals that were congregated in large numbers in the foul and pestiferous cattle-sheds of the metropolis. Others have sought for causes in the crowded and ill-conditioned state of the vessels employed in the transport of foreign cattle to this country. That these causes are all fertile in the production of disease few will deny, but many will question the possibility of this special and particular one *being thus produced.* And now, gentlemen, we may ask ourselves these questions:—Is the cattle plague of England indentical with the rinderpest

or the steppe murrain of Russia? And if so, *can* it be produced spontaneously in any other country than Russia, or by any other breed of cattle save those peculiar to the steppes? Of its identity, all the investigators who have had opportunities of becoming familiar with the disease on the Continent of Europe entertain no doubt. Professor Simonds, from the first day he was called in to give an opinion respecting it, was satisfied of its being one and the same disease; and he it was who first called the attention of the Government and the profession to the vast and vital importance of the subject, and pointed out the means which should be adopted to meet so dire a calamity as had fallen upon the herds of this country. He urged upon the Government again and again the necessity of prompt and vigorous action, but they were as slow to act as the people were to believe, and the frightful consequences of their neglect and ignorance we are now realising. Every act of the Government has been most reluctantly wrung from them by the necessities of the case. Professor Bouley, during his visit before referred to, at once recognised the disease, and bore witness of its identity with contagious typhus. On his return to France he published a report to the Minister of Agriculture, who fortunately believed what he said, and adopted the necessary precautions to prevent the introduction of the plague into that country, and with perfect success. The professor ridiculed the supineness of our Government and the ignorance and obstinacy of our people. He insisted, like his great predecessor, Renault, upon the impossibility of its spontaneous origin in this country. He says—"It has but one home, and that is in the steppes of Eastern Europe and Asia, for there only we meet with the conditions of its spontaneous generation; it is there that its germ is developed, but there exclusively, and nowhere else, however bad may be the conditions in which the bovine species can be kept." "If the typhus depended on the bad condition of the byres in which milch cows are kept, it ought to reign perpetually among the dairies in Paris and its suburbs. Compared to the cow-houses of Paris, those of London are Louvres, and nevertheless the typhus does not break out in those. Since the inauspicious days of 1814 and 1815 we have not had it in France, and it is 110 years since it last visited England." Such are the words of Mons. Bouley.

We have now ceased to believe that this malady is indigenous. England, by the blessing of God, has not the sad fecundity which has been attributed to her. The earth of her green pasturages does not conceal within it, like the putrid soil of the steppes, a germ of death for the animals which breathe its emanations. Old England is, and will remain, the favoured mother of those beautiful bovine races which are one of her glories, but on the condition that she knows how to defend herself against the invasion of animals of the steppes, or at least that she will not open her ports except when she has had testimony, by a sufficient quarantine, that they are clear of all infectious principles.

This is the safety of England. If she adopts the fatalistic doctrine that the typhus—to the infliction of which she is now subjected—is an indigenous malady, she will see her bovine population disappear, as in Egypt. But this doctrine is false, radically false; and one thing only excuses those who sustain it—it is, that they speak of that which they do not know.

The late Professor Renault, after carefully collecting all the evidence on both sides—the official documents of almost every Government of Europe—was satisfied, and challenged his opponents to produce one single instance where the disease has broken out spontaneously, other than in the country before mentioned. Nor can an instance be quoted where one single Russian army of any extent has been on the move, when followed by

cattle taken from the south and east of Russia, without this pestilence having followed it. And, on the contrary, the French and other official reports do not mention one instance of such a disease ever having shown itself among the cattle destined to follow and feed the armies of those countries, although they must have been exposed to like causes.

Time and space will not admit of our following this interesting and important part of our subject farther; but I would refer you to the ably written work from which I have quoted. I am firmly of opinion that the identity of the cattle plague with that of the Russian steppe murrain can be clearly proved; and this being the case, and also the evidences being all against the probabilities of its spontaneous origin in this country, how are we to doubt the correctness of Professor Simonds' opinion with regard to its importation from Revel, in the cargo of June last. It is quite true the Government Commission was not altogether satisfied with the evidence upon that point, nor are we likely to know from whence that evidence came; the probabilities are it came from parties who were specially interested in the concealment of truth. It has been said that no disease was detected by the inspectors at Hull, nor is it likely it was, even if it existed. Look, until recent events called forth stricter scrutiny, at the lamentable want of care that was exercised in these matters; read the disclosures of the state and condition of the vessels that were daily and weekly bringing to us the large quantities of cattle required for our use; look at the class of men who were acting as inspectors at these ports, and we need not feel surprised if one or fifty diseased animals had been passed, their state unheeded and unquestioned. Again, it has been asked, if this disease was brought into this country by this particular cargo, how happened it did not show itself on the voyage? How are we to ascertain that it did not? How are we to know that all the animals shipped at Revel arrived at Hull? All the truth connected with this baneful cargo will, perhaps, never be disclosed. Too many interested parties are unfortunately opposed to it.

Having thus far endeavoured to show the identity of the present cattle plague with that of the true rinderpest, and having also laid before you some of the opinions existing as to the probabilities of its spontaneous origin in this country, we may now pass on to the question of its pathological nature.

I believe it may be fairly and properly classed with the exanthematous or eruptive diseases, of which smallpox, scarlatina, and the human plague are types. Although the eruptions in the present disease are not so clearly defined as they were said to be during its last visitation, yet were the envelope or skin of the animal not covered as it is we should have no difficulty in detecting upon it those peculiar spots similar to those which are to be seen studding the different mucous membranes of the mouth, and those of the respiratory and intestinal passages. Those who have had greater opportunities than myself of investigating morbid parts say those spots are rendered more distinct on the skin by the early processes it undergoes in the course of tanning. We may have to speak hereafter more particularly of the nature of those eruptions; at all events, I think their existence is sufficient to indicate the class of diseases to which we here ally this disease. That it is the most virulently contagious and infectious of all diseases incidental to the lower animals few will or can deny, for whenever and wherever it has broken out, and has been allowed to work its insidious will, it almost invariably brings death to the whole herd, whether this happens by immediate contact of the diseased with the healthy or is conveyed through the medium of the atmosphere or otherwise by means of fomites or protozoa. We know that when once the morbific germ has entered the animal's system a short time suffices (varying, perhaps, from two days to

two weeks), and the whole of the circulating fluid becomes contaminated, or, in other words, poisoned; and not until this has taken place—unfortunately for us as for the animals—are any indications or symptoms of disease shown. This process of growth, of fructification of the germ, is certainly marvellous, a particle just sufficient to moisten the point of a lancet, as we know in inoculation artificially, or when conveyed in the natural way in quantities too delicate to be detected, even by microscopical aid, being sufficient, when once introduced into the circulation, to effect such wondrous results upon the whole mass of blood as to kill almost as effectually as the pole-axe. Its *modus operandi* is yet but speculative, and perhaps will ever remain so. The doctrines of the old humeral pathologists, so long and undeservedly sunk in contempt, are again becoming acknowledged as truths. Liebig, when speaking of this subject, says—"A substance in the act of decomposition, added to a mixed fluid in which its contents are contained, can reproduce itself in that fluid exactly in the same manner as new yeast is produced when yeast is added to liquids containing gluten." He may possibly be right. When once the animal's system does become pervaded with the poison, nature makes attempts to cast it off. This she does by the lungs, during the respiration; through the skin, by its exhalation; by the intestines and by the kidneys; and should the powers of the animal prove sufficiently strong to thus cast off the poison it recovers; if not, it dies. But as long as it is allowed to live the morbid matter is constantly being thrown off by these emunctuaries, and the animal becomes of necessity a frightful source of contagion, and all others of the same species coming within its influence are like affected. That some, although very few, escape, we cannot deny; but experience has told us how few they are. Those few may be said to be insusceptible to the influence of the poison. Such exemptions often occur in the human subject with regard to smallpox and other diseases; but in this disease, so virulent is the poison that the exemptions are reduced to an exceedingly small per-centage. Dr. Thudichum, in a report of September last, prepared by order of the Privy Council, on "The Principles and Practice of Disinfection" (which report should be read by all who are anxious to acquire information upon this subject, and who amongst us is not?), considers the fæces, urine, ruminated food, all secretions from the mouth, nose, and eyes, and any sore part, as well as all parts of animals that have died or have been killed during advanced stages, are infectious. Skin, hides, hair, horns, and hoofs, must be treated with precaution; but he believes the intestinal discharges are the principal agents upon the distribution of which mainly depends the spread of the disorder. This valuable report goes on to show by what other means the contagious matter may be conveyed from place to place and from animal to animal. All articles that have been in contact with a diseased animal, or any of its discharges, are capable of carrying the infection for an indefinite time. And it *has* been carried, doubtless unknowingly, for long distances, when least suspected. This may and does account for numerous outbreaks where it has been said that no means of communication could by any possibility have taken place.

During the earlier progress of the disease this last year most of our best authorities held the opinions that it was solely confined to animals of the bovine tribe, and that it could not be communicated to animals of any other. These opinions, however, appear to be erroneous; and Professor Simonds, by propagating these views so decidedly, has brought upon himself much undeserved odium, and that not only from the public, but, I am sorry to hear, from some members of our own profession. It *has* been found that the disease is not confined to the ox tribe, it having been communicated from the ox to sheep, and *vice versa*.

The professor, with a candour and straightforwardness which characterises him, on his ascertaining these facts by his investigations in Norfolk, at once acknowledged his error. This, I believe, may be said to be almost the only mistake of any importance that Mr. Simonds has made since the first outbreak of the disease; his prognostications otherwise have been verified almost to the letter. Rumours from time to time have reached us through unprofessional sources that horses, pigs, and other animals, are susceptible to the influence of the contagious matter, and have been affected thereby; but these rumours, like thousands of others connected with this subject, have as yet proved fallacious. None but the ruminantia have been found to suffer; nor need we, I think, feel much impressed if it should be proved that the disease is communicable to and from all animals of this order, if we take into consideration how nearly they are allied in organization and habits. The disease, however, as showing itself in sheep, although identical in symptoms and morbid appearances, has not been found to be so fatal, nor can the susceptibility in those animals be anything like so great as in the ox tribe, while the outbreaks have been very few indeed compared with the exposure to infection. But the question of susceptibility, for the credit of the profession, should be set at rest, and by actual experiment thus placed beyond doubt.

Its communicability from the ruminant to man is, fortunately for us all, extremely doubtful, although the death of our poor professional brother, the late Mr. Plomley, has been advanced as a proof to the contrary. He died, doubtless, from the absorption of putrid matter into the system, but we well know that death may be thus caused whether the matter be derived from the morbid parts of the animal that has died of any other malignant affection than rinderpest. It has been ascertained that the poison may enter the human system, and be retained there a sufficient time so as to render the peculiar smell of the disease perceptible in the fæces and urine, without producing any ill-effects on the organism.

Nature of Rinderpest.

The rinderpest is said by some eminent pathologists to be identical in its nature with that of typhus in the human subject, by others it has been likened to typhoid fever, but it differs from both those diseases in many distinctive essentials—in symptoms and morbid appearances. It is not typhus, it is not typhoid; as these diseases differ from each other, so does rinderpest from both. Nor can any disease with which we are acquainted be identified with it. It depends on a specific blood-poison, as much as do cholera, smallpox, or yellow fever; nor can the poison of one produce the other. Within the last few weeks Dr. Murchinson, Mr. Ceeley, and others, have come forward very confidently before the profession and the public, and asserted that the cattle plague is nothing more or less than suppressed smallpox, and have accordingly recommended vaccination as a prophylactic against it. They say the two diseases are identical, and that one can be produced by the contagion of the other. I for one do not subscribe to their belief, or we should have had numerous instances of smallpox breaking out in persons who have been in contact with diseased animals. Surely all these persons cannot have been protected by former vaccination. As yet these gentlemen have not shown that the eruptions on the skins of the diseased animals go through the usual stages of variola. The disease could not have been suppressed in very many instances. I think it would have been much more satisfactory if, before such authorities had given publicity to their opinions, they had tested their truthfulness by actual experiments. This they might easily have done, so that the hopes of the public would

not again have been raised upon half surmises. It is not, I confess, altogether incompatible with our views of the nature of the disease should vaccination prove to be a prophylactic; but it will be as well for us to be careful for the present of propagating that which might in the end prove erroneous. The idea of the identity of rinderpest with that of smallpox is very far from a new one. It has been advanced over and over again by continental authorities and abandoned.

The incubative stage of the plague varies, as we have before observed, considerably in different animals, arising from causes many of which we are, perhaps, ignorant of. From two days to two weeks, and I believe I am correct in saying that in some instances as long a period as three weeks, have been known to elapse after the virus has been received into the system before any external symptoms have been exhibited. Some breeds are said to be more susceptible to the infection than are others. Professor Simonds says that Hungarian cattle are less so than most others met with in the Australian dominions, and can better bear up against it, so that the per-centage of deaths amongst them is much less. If this can be said to be the case in them, it is not so in our own; nor need we be surprised at this, for it is a fact notorious in medicine that the mortality is always greater when disease of a malignant character breaks out among animals that are new to its influence. When smallpox, syphilis, or cholera, is first introduced into a country the malignity and mortality are always found to be greater, and to decrease with time in their potency; and we may be led to hope that this will be the case with the rinderpest.

Symptoms of Rinderpest.

With the symptoms which characterise the disease you are, doubtless, by this time, all intimately acquainted, but I much fear that in the earlier outbreaks of it they were mistaken for others; nay, in many instances, somewhat to the discredit of some members of the profession, such mistakes have occurred. In one district in the extreme west of England, a professional man persisted for some time in denying the existence of the plague, mistaking it for pleuro-pneumonia, until serious mischief had been done, and he was stigmatised as incapable and ignorant. In other instances eczema epizootica has been mistaken for it, the drivelling of mucus and saliva from the mouth and nostrils, doubtless, giving rise to this, these symptoms being common to both affections. Facts such as these afford but too strong proofs of the necessity of our being thoroughly conversant with this branch of our subject.

The symptoms in the earlier period of the second stage are not so clearly defined as to lead us at once to diagnose the disease, without previous practical experience. They are so slight, in many cases even after a day or two, that the inexperienced could hardly believe they had before them a malady of so formidable and fatal a nature. There is little or no exhibition of pain, but simply a depression of the vital powers; yet the beast looks ill, the head droops, the ears lop, and the nostrils present a shining appearance. After a time there is a spasmodic twitching of the panniculus and other muscles over the region of the neck and shoulders, the back and sides. The coat stands erect; every now and then the frame is shaken by rigors. The respiration is little affected; nay, when the lungs are not implicated, no increase whatever takes place in the breathing, and in no case have I seen it painfully so; but if the animal is left quiet and undisturbed a slight moan or grunt may escape him; diarrhœa may or may not be present; the flanks look drawn up. On the inner sides of the lips and round the margin of the teeth, a reddish or purple appearance will

be present. The palate is studded more or less with well-defined patches, and, occasionally, the membrane denuded of its epithelium, which may be mistaken for ulceration. The visible mucous membranes are of a pale pink colour, especially at the vagina; and, as far as I have seen, it is peculiar to this affection. The discharge from the nostrils is more or less copious and of a muco-purulent character, with a suffusion of tears trickling over the cheeks. There is a suspension of rumination, little or no appetite for food or water, and in milch cows there is an almost total suppression of the secretion of milk. As the disease advances to its last stage these symptoms become more intensified; the alvine discharges are more fetid, those from the nostrils, mouth, and eyes, more glutinous and tenacious; more and more depression follows, and the animal dies from gradual sinking and suspension of the vital powers. If I were asked to point out one particular symptom characteristic of the disease, and by which it could be clearly defined, I should be somewhat at a loss; but, certainly, the symptoms absent in the least number of cases I have had an opportunity of seeing have been the staring coat, the spasmodic twitching of the muscles, and the peculiar colour of the visible mucous membranes of the vagina, the mouth, and the eyes. The symptoms must be taken as a whole, no one or two being sufficient to direct us in forming a direct diagnosis. I should most strongly advise all professional men, who are not already practically acquainted with the disease, to make themselves so even at much personal sacrifice of time, as one mistake made may prove fatal to the reputation of the veterinary surgeon.

I have assisted in examining *post-mortem* a large number of animals that have died and been killed from this disease, and one cannot but be forcibly struck with the apparent absence of all signs of true inflammatory action in the organs most essential to life. The mucous membranes appear to be principally affected, and they are more or less so throughout, but, of course, varying considerably in different parts according as the disease varies in intensity and the efforts made by nature to expel the poison. In some instances we find the buccal membrane denuded here and there of its epithelium, extending to the dorsum of the tongue and pharynx, the papillæ of which are broken down, as it were. The nasal passages, the windpipe and bronchial tubes, may or may not be congested. The latter is sometimes filled with frothy mucus, but the structure of the lungs or their serous coverings seldom show any signs whatever of disease; nor have I seen the slightest effusion either in the cavities of the thorax or pericardial sac. The lungs of one animal I examined, however, showed unmistakable evidence of old disease, pleuro-pneumonia, but, of course, this was only a complication.

In the rumen and reticulum very little change appears to have taken place; certainly no change to characterise this disease. There may be found, occasionally, some signs of congestion, and the epithelium also peels off readily. The condition of the omasum has given rise to much speculation, from its contents being often found in a somewhat dry and hardened state, so much so as to have given a name to the disease—*loser aune;* but I need not tell you that those who gave it the name could not have known much of veterinary pathology, for we well know this condition of parts is frequently met with in animals that die of other diseases. The villous membrane of the abomasum I have always found to be more or less congested, varying, however, considerably in degree, but towards the pylorus it is usually more intensified. The whole of the intestinal canal, from the duodenum to the rectum, is also congested, and the epithelium thickened, and when this is removed the congestion is, of course, more visible. Throughout the whole tract of the mucous canal, from the lips to the anus, may be

seen, those peculiar spots or patches of eruption before mentioned, sometimes in one part, sometimes in another, varying considerably in size, from the eighth of an inch to an inch or more in diameter. I saw them very large in one instance on the leaf-like folds of the omasum. The nature of these spots, which are of the same character as those found on the skin, have given rise to some controversy, being considered by some pathologists to be ulcers; but as far as my observations have gone they are not so, they more resemble petechiæ, papulæ, or pimples; although they may appear in some instance broken down, yet I have not seen a true and well-defined ulcer in the course of my examination. But whatever may be their nature, they appear to be peculiar to this disease. Those persons who have likened the disease to typhoid fever in the human subject speak also of ulceration of the intestinal glands; but I have never seen the existence of ulcers either in Peyer's, the solitary, or the mesenteric glands, although, occasionally, they may be found somewhat enlarged and discoloured. Neither the liver, the spleen, or the kidneys, exhibit any signs of active disease, although they are sometimes found pale and flaccid. This is often the case in animals that are allowed to die of many other affections, and in numerous instances their structure is unaltered. There was one abnormal condition which I found to be invariably present in every animal I examined, and that was emphysema in the cellular or areolar tissue of the lungs, about the kidneys, between the muscles, or under the skin. This never being absent in some part or other leads me to look upon it as a characteristic morbid appearance in this disease, to which may be added the fluid condition of the blood and the peculiar smell emitted from the carcass. I have not minutely examined the nervous structures of many, but, as far as I could see, the brain and spinal marrow were little altered in appearance. The bladder and urinary passages presented no signs of disease. The mucous lining of the vagina and anus, especially towards the external folds, showed the pink colour before mentioned.

Such were the *post-mortem* appearances which presented themselves to me in my examinations. They have been more minutely and, perhaps, more accurately described by numerous writers; they are, however, I hope, sufficient to show us that this disease may be properly classed with the exanthematous or eruptive fevers, but depending upon some poison peculiar and specific in its nature.

Treatment of the Disease.

We now approach that division of our subject which is, perhaps, the most unsatisfactory, namely, the treatment of the disease, although more has been written under this head than any other. Men of all classes, from the physician to the quack, have rushed headlong, pell-mell, to offer suggestions and multiplied recommendations for its extirpation and cure. Occasionally the most absurd nostrums have been placed before the public and vaunted as specifics, even by men who pride themselves upon their knowledge of the principles of medicine. Homœopathists, hydropathists, and other pathists, have each declared that by their systems alone could the disease be cured. Carbon, in the form of charcoal in fine powder; whiskey, brandy, port wine, and other strong drinks; quinine; muriatic, nitric, and sulphuric acids; purgatives; preparations of iron; chlorates and nitrates of soda and potash to supply oxygen to the blood; sulphates and sulphites; inhalations of chlorine and other gases; and, in fact, the whole pharmacopœia has been ransacked for remedies. Hosts of quacks of all denominations have sprung up to feast and market upon the credulity of cattle-owners. Thorley and others of his calling exclaim that their cattle foods

are the only preventives, if not cures, for the plague. Vinegar dealers and vendors, and manufacturers of disinfecting fluids and powders, have each taken their turn in the market, with what success we too well know. Dr. Hamilton, the champion of homœopathy, who declared that 45 per cent. of diseased could be cured, and had been in Holland, has signally failed to convince us of the truth of his system when fairly put to the test. That bubble, like the thousand others, has burst, and left us without a remedy. And will one ever be found? is a question that we may safely answer in the negative, if we may judge by the success that has hitherto attended the treatment of this class of diseases in the human subject to which this one may be said properly to belong. All the so-called curative treatment of the physician has not tended to lessen in the least degree the mortality of these diseases. One of the most eminent authorities says, "We cannot cure these maladies, and, therefore, our aim must be to keep the patient alive until the fever-poison has expended itself." If such is the only principle that can guide the physician in these cases, so must it be in the case of rinderpest, if we determine upon treating it at all. All the animals that have recovered (these being somewhat about 10 per cent.), I need not tell you, have owed their recovery to the "*vis medicatrix naturæ*" rather than to any remedial measures that have been adopted by the veterinary surgeon. So little success having thus attended our curative efforts, our attention should be vigorously turned to the best means of prevention; and we should keep constantly in view the importance of isolation, separating the healthy from the diseased. The strictest cordons that can be enforced should be recommended by us to all authorities, and the principles of disinfection should be rigidly carried out wherever we can make ourselves heard, in accordance with the recommendations contained in the truly valuable report of Dr. Thudichum before adverted to. And let us always bear in mind that the best way of stopping the contagion is to destroy the infected animals and bury deep the carcass. Let me also impress upon you the necessity of caution in your diagnosis; but when once you are satisfied you are correct, be firm and honest in your recommendations; then, as a profession, we cannot fail to hold ourselves rightly in the estimation of our country. Our work is yet but begun. If this theory of vaccination should prove of no avail—as the many others that have hitherto been advanced (God forbid it may not!)—we have years of toil before us. Time will, doubtless, modify in some degree the virulence aud malignancy of the contagion, but we must look forward, however stringent may become the legislation on the subject, to a long and tedious fight before this horrid pestilence will be driven from our country.

In conclusion, gentlemen, accept my thanks for the kind attention you have accorded me during the reading of this paper. I fear I have ill performed the task I set for myself. The little matter that I have introduced to you on the subject may be barely worth the time you have given me, but I do hope there may be some points which will be found well worth your discussion; and if during such discussion any new light be thrown upon the disease, any new views enunciated, I shall be amply repaid for any little trouble I may have taken in compiling this paper.

The President, after thanking Mr. Gregory for his well-written paper, which he considered both strictly scientific and highly instructive, invited those present to enter freely into discussion on the merits of the views they had just heard enunciated.

Dr. Spooner, Mr. Broad, Mr. C. W. Gregory, and Mr. Dring, took part in the discussion that followed, and which lasted for a considerable time.

Mr. Broad, at its close, proposed that a vote of thanks be given to Mr. T. D. Gregory for his talented paper; *Dr. Spooner* seconded the proposition, and it was unanimously accorded to him.

Mr. Gregory returned thanks in suitable terms, and took occasion to remark that he wished members of the profession would take a greater interest in these associations.

A vote of thanks was proposed by the *President* to Dr. Spooner for his attendance, and the kind manner he had entered into discussion upon the subject of the day; *Mr. Broad* seconded the motion, which was passed unanimously.

It was proposed that the next meeting should take place on Thursday, the 19th of April, at Taunton, at the hour of one o'clock. This was duly seconded and agreed to.

Mr. Broad kindly offered to read a paper at that meeting.

A cordial vote of thanks was then given to the President for his dignified conduct in the chair, and the meeting broke up.

The members and their friends adjourned to the Exchange Dining Hall, where a pleasant evening was passed.

R. H. Dyer,
Hon. Sec.

Veterinary Jurisprudence.

NEWTON ABBOT COUNTY COURT.

(*Before* Mr. Serjeant Petersdorff, Judge.)

(*Concluded from* p. 179.)

Mr. Dyer endeavoured to explain the nature of these complaints by stating, that they frequently assume such changes; in fact, it sometimes happens that an animal believed to be perfectly free from disease will communicate glanders by inoculation. He further related Professor Spooner's experiment, which was performed at the College some ten or twelve years ago, with an animal suffering from strangles. This animal having common abscesses between the jaws, the professor inoculated an ass with some of the pus, which produced glanders and death in a short time; nevertheless the animal, from which the matter was taken, recovered and left the College. In a further cross-examination, Mr. Dyer remarked that no veterinary surgeon would be justified in pronouncing an animal to be glandered when there was an absence of ulceration, and that peculiar discharge, as of thin glue or thick gum water, together with the submaxillary glands not being adherent to the jaw. All these symptoms were absent up to the 11th of May; but he was of opinion at that time, that the discharge from the nostrils had the power of producing glanders by inoculation.

Mr. Carter inquired, if two horses worked side by side, and

they rubbed against each other for a day, would this produce glanders?

Witness said, if they rubbed against each other for that time, so as to cause a sufficient amount of friction to remove the hair, and with it the skin, and a glandered horse were to place his nose upon the spot and inoculate the other, this would produce glanders to a certainty.

The cross-examination of this witness lasted a considerable time, but no prevarication in the evidence was elicited from him.

By *Mr. Francis.*—There was no doubt but that glanders were present when he first examined her, although he was not then justified in pronouncing her glandered, owing to the absence of all symptoms.

In examination by *Mr. Carter*, it appeared that there was a kind of epidemic amongst horses during last spring, and that the mare in question was treated as though attacked with this epidemic. It was explained that the epidemic might result in glanders, and that it was possible for a glandered horse to work with healthy ones without infecting them, and that glandsrs were not infectious unless conveyed by inoculation.

His Honour.—You saw the mare on the 11th May, and that was two days after the sale; and I think you told me, that that short interval would not produce any essential variation in the symptoms or the character of the disease. Bearing in mind the state the animal was in on the 11th May, would you be prepared to say whether or not the mare was on the 9th labouring under a contagious disease, and such a disease, that it was inconsistent with public safety that it should be exhibited at a public auction?

Witness.—Certainly, it would not be consistent.

His Honour said, that as the question of disease was the principal point, he thought that at that stage of the proceedings the opinion of the jury might be taken.

Mr. Carter contended, that the defendant had no right to take advantsge of the mare being diseased. He had illegally sold the animal, and could not escape being sued for damages. He was employed to do a legal action, and failed in its performance. He remarked, it was a hard case that the evidence of one man should settle the matter; for in reality the scientific witness had settled the question, and he was prepared to produce evidence of a rebutting character.

His Honour said, he, Mr. Carter, had had quite sufficient time to bring forward his case, and he knew what evidence would be tendered by the defendant. If the mare was diseased at the time of the sale it would be an illegal action, and they could not recover damages. Had he complied with the legal requirements, and the mare was proved diseased, he was liable to a criminal indictment.

His Honour then put it to the jury whether it was their opinion, from the evidence which they had heard, that on the 8th May it was inconsistent with public safety that the mare in question

should be sold and exposed in the public streets. If they entertained any doubt on the point they would proceed with the case.

The Foreman said, that the jury were of unanimous opinion, that the mare was glandered, and not fit to be sold on the 8th May, the day of sale.

Mr. Carter said that his Honour had prevented his addressing the jury on behalf of his client.

His Konour said Mr. Carter could do so now.

Mr. Carter.—It could not be expected the jury would eat their words.

His Honour.—Such things he had known done.

Mr. Carter.—I might have caused the jury to come to a different conclusion.

His Honour.—You had better try it.

Mr. Carter.—It is the evidence of one witness only that decides the case.

A verdict was accordingly found for the defendant, costs being allowed on application.

His Honour, in discharging the jury, said he entirely concurred with them in the verdict they had given.

PRESENTATION OF A TESTIMONIAL TO PROFESSOR TUSON.

By the Students of the Royal Veterinary College.

On Wednesday evening, March 7th, 1866, a numerously attended meeting of the Students of the Royal Veterinary College, at which also Professor Varnell and Assistant Professor Pritchard were present, was held in the theatre of the college, for the purpose of presenting to Profession Tuson a testimonial consisting of a handsome binocular microscope, by Smith and Beck; also an engrossed scroll upon which the event was recorded. The meeting was presided over by Mr. Lowe, who, after announcing its objects, called upon Mr. Packman, the honorary Secretary, to read the address, which ran as follows:—

Gentlemen,—I have this evening, at your request, a task to perform, which gives to me extreme pleasure and gratification, namely, that of presenting to Professor Tuson a small token of the esteem with which he is regarded by the students generally of this college, both for his kind and gentlemanly bearing towards us, and also for his endeavours to impart to us a knowledge of that branch of our studies which it is his especial province to treat of. I allude to chemistry and materia medica. One of the most remarkable features of the present era is the unbounded zeal evinced by large numbers of individuals to advance science by efforts to further elucidate important facts which have of late years been brought to

light, and to discover others which still remain involved in mystery, and thus to contribute to the onward progress of scientific knowledge.

Of all the sciences there is not, perhaps, one more beautiful and interesting than that to which I have above alluded, inasmuch as it affords to life, manufactures, commerce, and medicine, innumerable benefits. In manufactures and commerce, during the last few years, immense progress has been made and large stores of wealth opened up by the facts which active and energetic Chemists have discovered and rendered of practical utility, but notwithstanding all that has been done, there still remains much which will require many years to elucidate. Let us take a glance, however, at chemistry as applied to medicine, in which we are more immediately interested, and I think it will be readily admitted that without its aid it is perfectly impossible to understand how the functions of life are carried on, or how it is that benefit may result from the application of certain medicines when these functions shall become deranged, for, without doubt, certain chemical laws govern them both. Look to the beautiful law of nature in maintaining life and providing for the growth and nutriment of animal and vegetable bodies, in which important changes are constantly going on ; and whilst substances of different kinds are assimilated and converted into the various structures of which these bodies are made up, others which are no longer required and have become deleterious are transformed into compounds capable of being removed from the system.

Again, in the administration of medicines, certain chemical laws are in force to account for their modus operandi, in contributing to the alleviation of suffering resulting from disease, although the particular and exact manner in which many medicines act is at present imperfectly understood. At the same time, owing to the investigations which have been made by certain individuals, it has been demonstrated to satisfaction that medicines possess particular properties, and have definite actions; hence we are enabled to arrange them into certain classes, as hæmatics, neurotics, astringents, and eliminatives, all of which have the power of bringing about certain phenomena. But this department of study is still in its infancy, and presents a vast field of enterprise for the present and future generation of chemists, that which is already known serving as a basis upon which their experiments and investigations are to be made. Too much importance cannot, therefore, be attached to this branch of our profession, for without a knowledge of it we should be empirics, indeed, as independently of this we should be not only entirely unable to combat disease in a scientific manner, but we should also be at a loss to account for the pathology of very many diseases to which man and the lower animals are subject.

Are we not aware that by the union of two agents, which in themselves are entirely harmless, we may produce a compound possessing such properties that it would quickly prove fatal if administered to an animal, but from a knowledge of chemistry we are

enabled to discriminate, and thus prevent any ill consequences, which, doubtless, in former years were of frequent occurrence. Not long back in the history of medicine a conglomeration of remedies were often given in a disease with the idea that if one of them did not eradicate such disease another would, the practitioners of those times being unacquainted with the fact that the decomposition would frequently produce compounds either entirely inert or deadly in their effects. Who, of the present generation, would give a medicine without first conjecturing in his mind why he gave it, and what effects he would expect to follow its administration?

I might dwell at great length on this subject but it is needless for me to do so.

I have merely called attention to the above facts to shew the importance which is to be attached to this science; and, seeing its value, and the advantages we are likely to derive from its study, we ought to deem ourselves fortunate in having as our pioneer one possessing a sincere love of the science, and who labours so energetically in our behalf. I am confident that I express the sentiments of all when I say that we shall, in after life, ever look back with sincere pleasure to the kindness and gentlemanly bearing on all occasions evinced towards us by Professor Tuson. As a slight memento of our esteem, and in the name of the class I have now the pleasure of presenting to him, coupled with sincere wishes for his future welfare, this microscope, which I hope may serve as a remembrance of us long after we have quitted the walls of this institution.

The reading of the foregoing address and the presentation of the microscope being concluded, Professor Tuson rose and returned thanks in a speech, of which the following is the substance.

The Professor said that it was nearly twenty years ago since he commenced the study of his profession; that during the greater part of this period he had been actively engaged in imparting chemical instruction in various medical schools, and that while demonstrator or assistant, he endeavoured to supplement the courses of study provided by the institutions to which he belonged by establishing voluntary classes, wherein students were prepared for their examinations.

For the services thus rendered he sought no remuneration; nor did he receive any acknowledgment whatever, not even a vote of thanks from those who resorted to and benefited by his assistance. Many, perhaps most, of his hearers might consider it an act of extremely bad taste to refer to such a circumstance as that just mentioned, but he believed that he should be pardoned for so doing when he assured them that his sole object in making the reference was to prove to them more than any words he could utter how deeply and acutely he felt their kindness and liberality towards him, while he had simply been performing his duties as a salaried teacher of the college in which they were pupils. Professor Tuson next alluded to the behaviour of the students he had the pleasure of teaching, and stated that both as regards their conduct at lecture, and their comportment towards their teachers,

not only were they equal, but superior, to the students in many of the schools of human medicine, so that, instead of experiencing difficulties in maintaining discipline, as he had been led to expect prior to his occupying his present appointment, he found the conduct of the students of the Royal Veterinary College so uniformly creditable and good that such difficulties had never yet been realised by him. He said that to make such an announcement was only just to his pupils, and was a source of great pleasure and gratification to himself. On his own behalf, he would say that he feared, nay he was certain, the encomiums they had bestowed upon him, he was not fully entitled to; nevertheless he assured them that, so far as lay in his power, neither time nor means had been spared to render his course of instruction as systematic, as practical, and as useful, as he knew how or could learn how to make it, both as regards their present and their future requirements. He had also earnestly striven to make his pupils feel that he was not merely a lecturer, but that he was desirous of being their teacher in every sense, by removing every impediment which might prevent their seeking information and advice from him on all possible occasions. Not only did they confer pleasure by seeking information from him respecting the pursuit to which he was greatly, in fact, he might say, fondly attached, but he was often flattered by being consulted by them on matters of a more private nature. Thus, then, he hoped he had shown that he had been amply rewarded for any little extra exertion which he had been induced to make on their behalf by the respect they had always manifested towards him, and by the interest they had taken in the subjects he taught. He now begged to tender them his heartiest and most sincere thanks for the honour they had conferred upon him, as well as for the valuable and very beautiful microscope which they had been kind enough to present to him as a mark of their esteem. He assured them he should ever prize it, not more so, however, than he should treasure the kind and gratifying words which they, in their goodness, that night had addressed to him.

In conclusion, he said it was his sincerest wish that the kindly regard and goodwill which now existed mutually between themselves and himself might only end with their lives, and that they might pursue a career of health, prosperity, and happiness.

After a brief but complimentary and congratulatory speech, addressed by Professor Varnell to Professor Tuson, the proceedings terminated.

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Bland and Field, Newbury
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Sparrow, S., Cambridge
Wallis, Page, Cambridge

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altringham
Lewis, Walter, Crewe
Taylor, John Boardmau, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Banister, Albert E., Bridport
Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Dudgeon, David, Sunderland
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Plews, Thomas, Stockton
Thompson, Thomas, Sunderland

ESSEX.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, Woodford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

GLOUCESTERSHIRE.

Barling, Frederick Wm., Newnham
Hobbs, Henry, Newnham
Paradise, John, Dursley
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

HAMPSHIRE.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gates, Robert, Andover
Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

HEREFORDSHIRE.

Barling, J. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Hirst, Charles Samuel, Barnet
Proctor, Harrison, Hertford
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Bishop's Stortford
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.

Dickens, Charles, Kimbolton
Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives
Waters, George, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, William, Margate
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst. W. Henry, ditto
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Bridge, Roger, Bury
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, W. I., Worsley, Manchester
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Howell, James, Rochdale
Hutchinson, —, Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawson, John, Manchester
Lawson, John, jun., ditto
Lawson, William C., Bradshawgate. Bolton
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Polding, P. Oswald, Bury
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Taylor, Thomas, Manchester
Twist, Charles, Woolton
Welsby, Joseph, Prescot
Worthington, Wm., Wigan

LEICESTERSHIRE.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

LINCOLNSHIRE.

Batchelder, John, Grantham

LINCOLNSHIRE (*continued*).

Bland, George Colley, Crowland
Bland, William James, Boston
Clarke, Thomas Allen, Horncastle
Cutting, Henry, Market-Raisen
McHugh, John T., Brigg
Santy, Arthur Henry, Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H. Harleston
Carter, Charles N., Swaffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Branford, Wm. Catton, Oundle
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Hunter, H., Newcastle-upon-Tyne
Stephenson, C., Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Cope, W., 3, King's Road, Newark
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Young, Wm., Southwell
Western, John, Eastwood
Wilson, R. S., Ollaston

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

RUTLAND.

Parnell, Charles, Oakham

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jones, James B., Ludlow
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton
Roberts, Thomas, Oswestry
Walters, Robert G., Newport

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Gregory, C. N., Bristol
Hutchings, William, Kimpton
Leigh, Nathaniel, Bristol
Stauffer, J., Wedmore

STAFFORDSHIRE.

Barry, William, Lichfield
Carless, John, Stafford
Carless, William, ditto
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Harry D., Wolverhampton
Pritchard, Richard, ditto
Robinson, William, Tamworth

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes and Lowe, John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.

Callow, John, Horsham
Crofts, Henry, Arundell
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Elkington, R., Coventry
Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Walker, Alfred, Rugby
Watson, Walter, Rugby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Bibby, James, Calne
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, R. Tutnall, Bromsgrove
Harber, W. Alex., Kidderminster
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, J. W., Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Bourdass, George, Bridlington
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, ditto
Cooper, J., Market Weighton, Brough
Cuthbert, John, Leeds
Douthwait, William, Beverley
Dray, Edward C., Leeds.
Edmundson, W., Hornby
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Hedley, F., Richmond
Hedley, J. W., ditto
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Secker, Thomas, Ripon
Stephenson, William, Pickering
Thunton, James, Easingwold

WALES.

Bodington, George, Canton, Cardiff
Kennedy, Thomas, Wrexham
White, Thomas, Rhyd-y-Glaves, Corwen.

SCOTLAND.

ABERDEENSHIRE.

Snowball, Matthew C., Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

FORFARSHIRE.

Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso
Rowe, William, Jedburgh

NEW ORDERS OF COUNCIL.

A SUPPLEMENT to the *Gazette* of Friday, March 23rd, was published on Saturday, containing an Order in Council continuing the prohibition of the movement of cattle by railway on and after the 25th of March, and ordering that "no cattle shall be moved on any railway" before the 16th day of April, 1866.

A second Order, also dated and published on Saturday, March 24th, states that, whereas certain contagious disorders are now prevalent among cattle in the dominions of his Majesty the King of the Netherlands, it is hereby ordered that on and after the 28th of March inst. no cattle shall be imported or introduced into the United Kingdom which shall come from, or shall have been at, any place within the territories belonging to his Majesty the King of the Netherlands; and also that on and after the 28th day of March inst. no cattle shall be imported or introduced into the United Kingdom which shall be, or shall have been, on board any vessel at the same time with any cattle which shall have come from, or shall have been within, the aforesaid territories and dominions.

It is further ordered that, in the event of any cattle being landed in any portion of the United Kingdom contrary to the provisions of this Order, all such cattle, the importation whereof is hereby so prohibited, shall, upon their arrival in this country, be destroyed or otherwise disposed of as the Commissioners of her Majesty's Customs may direct.

In this Order the word "Cattle" is defined to mean Sheep as well as bovine animals.

THE CATTLE PLAGUE IN BELGIUM.

THE disease in cattle which has for some time prevailed in the commune of Merxem has assumed such a grave character that the Government has thought right to send to Antwerp two veterinary surgeons from Brussels, who, on their arrival, at once ordered 36 diseased animals belonging to MM. Bal and Co. to be slaughtered. Two days after 62 others out of 137 were put to death.

The *Belgian Moniteur* publishes a Royal decree to the effect that the indemnity for the slaughtering of animals attacked by the cattle disease, or suspected to be so, shall only be paid henceforward in cases where it shall be proved that the owner had kept the condemned animal in his stable for at least a month. This measure has been caused by the certain knowledge obtained that the reappearance of the epidemic at Antwerp is owing to the negligence of certain farmers, who, relying on the indemnity, trouble themselves very little as to the quarter from which they get the animals they purchase.

ERRATA IN NO. 459.

Page 207, line 23, *for* "conceives" *read* "concerns."
„ 209, „ 17, *for* "decisions" *read* "divisions."

THE

VETERINARIAN.

VOL. XXXIX. No. 461. MAY, 1866. Fourth Series. No. 137.

Communications and Cases.

CATTLE PLAGUE IN SHEEP.

From the evidence obtained during the past few weeks, it would seem that the agricultural community is not yet awake to the fact that sheep are liable to become the subjects of rinderpest. The system of putting ewes into yards or sheds where diseased cattle have been continues to produce the natural consequences, and even the most sceptical must begin to realise the existence of some uncommon malady among the sheep so exposed.

By this time the symptoms and *post-mortem* appearances of cattle plague are familiar to the majority of the members of the profession, and a comparison of the indications afforded by cattle and sheep, suffering from this affection, will help to remove any obscurity which may still hang over the subject.

The important question for solution is, what are the really characteristic signs of the disease in cattle or sheep? Many symptoms are common to various diseases; but in each particular malady to which we are in the habit of affixing a title, there are, or should be, some distinctive indications which are not found in other affections. It is of no consequence that the definitions of disease are arbitrary, and commonly unmeaning, the fact of their being generally admitted is sufficient for us at present; and it only concerns us to inquire what are the symptoms which of necessity are present in the disease, which, by consent, is distinguished by the term "cattle plague?"

Excluding from the list of symptoms all those which are not diagnostic, we may consider the following to be conclusive:—1. Prostration, shown by the depressed head, ears drawn back, sunken eyes, and despairing aspect. 2. Irritation of the mucous membranes, indicated by a pink tinge over the lining membrane of the mouth, or by red lines upon the gums surrounding the incisor teeth, redness of the papillæ, and probably desquamation of the epithelium from the surface of the membrane in various parts. The lining membrane of the labia is also reddened, and often covered with a muco-purulent secretion, which adheres to the surface with considerable tenacity. Neither of these signs, however, taken separately can be considered positively to indicate cattle plague. Prostration may depend upon a variety of causes. Redness of the buccal membrane, and desquamation of epithelium are frequently observed in the worst forms of eczema; and redness of the lining membrane of the vulva is seen before and after parturition, and even during œstrum, but the combination of all these symptoms is only found in cattle plague. Different observers have remarked certain minor signs, which possess to them great significance, such are, occasional muscular twitchings, and a periodical shiver, apparently voluntary, and suggestive of an intention on the part of the animal to shake something from its head. An increase in the thermometric heat of the body, although invariably present, must be classed among the general symptoms, as every febrile disease has its range of temperature; and we have ascertained, by numerous experiments, that during the progress of ordinary catarrh the temperature rises as much as in cattle plague. On this subject, however, we shall have more to say at another time. We are no friends to the haphazard system of "seeing at a glance," and we should be wanting in the performance of our duty did we not contend for a careful and minute examination of every case before the expression of an opinion: no symptom is too insignificant to be disregarded under the present circumstances; diminution of the secretion of milk, loss of, or impaired appetite, cessation of rumination, and a temperature of 104°, may be assumed to be premonitory signs of plague, and a reckless assertion that the animal is the subject of the disease is most likely, "on the doctrine of chances," to be verified, and the prophet to acquire honour in consequence; but should the case turn out, in the general unfitness of things, to be one of simple fever, we confess we had rather not share the feelings of that individual who has thus staked his reputation upon the hazard of the die.

It is asserted on, we forget whose, authority, that the "woman who hesitates is lost," and there is strong reason to believe that the same melancholy fate often attends the man who adopts the opposite course of action. The evils of rash decisions are, unfortunately, not confined to the individual, but are reflected upon the profession of which he forms a part; and this consideration should deter many a too confident man from making assertions, of the truth of which he may be assured, in the absence of evidence that will satisfy the minds of others.

If caution is commendable in forming an opinion upon the existence of plague in an animal of the bovine family, it is infinitely more important in reference to the members of the ovine. In sheep the disease is not so virulent, does not extend so rapidly through the flock, and is not attended with the extraordinary fatality that is its especial characteristic in cattle, nor are the *post-mortem* evidences in all cases so marked as we find them to be in the ox.

Sheep affected with cattle plague will generally show most of the signs of the same affection in cattle, viz., dulness, dependant head, irregular appetite, the occasional shiver, and in the case of ewes with lambs, diminution of milk. Diarrhœa generally sets in after these premonitory symptoms have existed for two or three days, and the animal quickly succumbs. The evacuations are very frequently light coloured, but in many instances they are very dark or nearly black in colour. Discharge from the nose is almost constant, but is by no means so frequent from the eyes, which, however, are usually dull. The lining membrane of the labia is reddened, and in many cases the buccal membrane is also congested. Desquamation of the epithelium we have only observed, to any extent, in a few cases. When the respiratory system is seriously implicated, there is the usual dry husky cough and accelerated respiration. The *post-mortem* appearances will vary according to the stage of the disease; and by this we do not mean according to the length of time the animal has been affected, because, as in cattle, the malady sometimes runs its course in a few hours, while at other times it continues for several days before reaching its termination; hence very marked lesions may be observed in one acute case that has terminated rapidly, while only comparatively trifling morbid changes may be discovered in a milder form of the disease, from which the animal may have suffered for a considerable period.

No single lesion of uniform existence can be taken as absolute evidence of the presence of cattle plague in sheep;

nor indeed in cattle; but the lining membrane of the abomasum is invariably found to be implicated in some degree in the changes which have been effected during the progress of the disease; and although it would not be consistent to decide upon the evidence afforded by this tissue, it is absolutely certain that the healthy condition of the lining membrane of the fourth stomach is inconsistent with the existence of plague, and for this reason the state of the membrane of this viscus should be carefully ascertained.

In a recent investigation, three sheep suffering from plague were killed and submitted to a *post-mortem* examination, and in each one the evidence afforded by the fourth stomach was most satisfactory, although nothing could be more varied than the lesions in each case, as compared with the others. In the first instance the membrane presented a general whitish-yellow appearance, and the entire structure was swollen and pulpy-looking, from effusion into the submucous tissue; this was particularly evident upon the folds, and more especially towards the pylorus; very slight erosions might be noticed on various parts of the surface, and here and there a faint tinge of pink mottled the otherwise uniform pallor. These appearances correspond to those observed in the same parts of cattle in the early stage of the affection.

The second case differed from the preceding in the more advanced condition of the morbid changes. The same whitish-yellow colour of the membrane was apparent, but there was an abundant mixture of red and light purple, producing a very characteristic mottled appearance, which is constantly met with in the abomasum of the ox under similar circumstances. The erosions were deeper, and the pulpy or œdematous condition of the entire membrane more marked.

The third animal had suffered from the disease in a very acute form, and the lesions in the mucous membrane of the abomasum were most decided; the whole surface was of a dark red, mottled with spots of bright vermilion, crimson, and black; numerous large sloughs existed upon the surface, and deep erosions were apparent, in some places extending through to the submucous tissues: more perfect and, in a certain sense, beautiful illustrations of three stages of the disease could not be imagined, and it was at the time a subject of regret, that all who are sceptical upon the question of cattle plague in sheep could not have their doubts put to flight by such irresistible evidence as these parts afforded. Passing from the fourth to the third stomach we may expect certain indications which will be corroborative, but we caution the members of the profession against resting too

much upon the lesions which are found in this viscus. The existence of hardened ingesta between the folds, or the presence of red spots, or yellow spots surrounded by red lines, and the ready separation of the epithelium from the mucous membrane are unmistakable signs, but neither in sheep nor cattle are they of universal occurrence. In many of the cases among sheep in Norfolk in September last, these characteristic indications were found; and in a few instances since we have remarked them, but their absence in the most marked cases of plague in cattle forbids us to attach to them any great significance as diagnostic signs. Very frequently, however, an injected condition of the vessels of the membrane of the omasum will be observed, and, not uncommonly, patches of a pink colour on various parts of the folds.

In the intestines the morbid appearances also vary considerably, the colour of the lining membrane passing from the dirty yellow tint to the deep crimson of intense inflammation. Sometimes the yellowish-white ground colour, which the lining membrane of the intestines assumes, is varied by longitudinal red streaks upon the edges of the corrugations, and this is particularly the case in the rectum.

The respiratory membrane presents the same aspect that is seen in various stages of the disease in cattle, varying from simple congestion to intense crimson, or nearly black, and a film of exudation often covers the surface.

Congestion and exudation are also seen in the fauces and posterior portion of the tongue.

The lungs are usually congested, but in some instances when a sheep has been killed in the early stage of the disease, these organs have presented the natural colour, excepting in those patches of exudation, which are consequent upon the presence of filariæ, which are dark in colour; but whether the lungs are congested or not, they are invariably distended with air, although the peculiar interlobular emphysema, which is always seen in the lungs of cattle, is never found in those organs in the sheep: this circumstance, however, is due to the difference of organic structure rather than to any peculiarity in the manifestation of the disease in the two classes of animals, in fact, the symptoms and *post-mortem* appearances are altogether more closely allied than might have been anticipated.

THE CATTLE PLAGUE, TYPHUS CONTAGIEUX OF THE FRENCH, RINDERPEST OF THE GERMANS, ISCHUMA OF THE RUSSIANS.

By W. Ernes, M.R.C.V.S., London.

The great and still vexed question is, whether the above-named disease arises spontaneously in any other country than the steppes, or in any other breed of cattle than that of the steppes. This malady, the most fatal of all which affect the bovine race, has been known for more than a thousand years, but it has often been confounded with other epizootic diseases, more particularly with the carbuncular disease, or anthrax. Since 1711 it has been more accurately studied and described, particularly after the establishment of veterinary schools. It seems that the great and long-continued wars of the period greatly contributed to its ravages, and that it always spread from east to west, according to the movement of the troops, or commercial relations.

The late Professor Renault says, "this malady is never sporadic, or if it begins by attacking a few individuals, when it is once developed it spreads in a fearful manner, and its propagation is not in proportion to a vitiated constitution which might prevail at the time, or an epizootic influence, the effects of which would be similar to an epidemic which spreads—the cholera and the pest for instance—but exclusively by virtue of the active contagious property possessed by the sick animals; their excretions, and even their remains after death poisoning other animals which have been in contact, or only in proximity with them. Their excretions and their remains being impregnated with this contagious property, they thus contribute to spread the infection far and wide." Until very recently the rinderpest has been considered a peculiar malady of the ox tribe, but of late years many instances have been recorded of its having been transmitted to sheep and goats, and *vice versa,* on the Continent, and also lately in England. From the statistics of Dr. Faust, it appears that from 1711 to 1796 the immense number of animals of the bovine species which perished from this pest was 200,000,000, and it is stated that no one was in a better position than the learned Doctor to make this calculation, and he was considered a most accurate statistician; it may, therefore, be considered a correct statement of the losses sustained by this fearful malady.

Origin of the Cattle Plague.

There are three opinions on this point amongst the learned professors of veterinary science in Russia—viz., 1st, that it originates in the Asiatic Steppes; the 2nd, that it originates in the steppes generally; and the 3rd, that it may originate anywhere; and is produced by local causes, the same as typhoid and other fevers in the human subject.

The steppes, which are supposed to contain the germ of this disastrous and fatal malady, are those immense plains of Asia and Europe situated between the 45th and 50th degrees of north latitude. Those in Europe, called the Kherson Steppes, extend from the Kniester to the Sea of Asov and the mountains of the Crimea. They are divided from Bessarabia by the Kniester, and from the Asiatic Steppes by the Don, and intersected by the Dnieper and the Bug; the soil is but little elevated above the level of the sea, and is completely bare of trees; the inhabitants use the dung of their cattle for fuel, for which purpose they knead it into the shape of bricks, and dry it; their riches consist in their herds of cattle and flocks of sheep and goats, also salt, of which there are many sources. The climate is the two extremes of heat in summer and cold in winter, when the snow falls so thick as to conceal the houses, during which time the *metel* (wind) blows a hurricane so strong that it drives the snow into immense heaps, and whole herds of horned cattle and horses, with flocks of sheep, are resistlessly driven into the sea, where they are drowned. The roads are mere tracks, marked by shallow ditches and posts on each side, with deep vales in which the wheels are half buried; in wet weather the horses and cattle sink in up to their knees and hocks in the soil, the carriage road being constantly changed and never mended.

The Asiatic Steppes extend from the Don to the river Ural, and to the foot of the Caucasian mountains. They are watered by the rivers Don, Maintsch, Volga, Rouma, and the Ural; they are, like the Kherson, barren of trees, and contain many salt lakes; they are inhabited, principally, by the Kalmuck Tartars or Mongols, and some Turcomans; these latter have obtained leave to fix their kibitkas (tents) in the southern parts of the steppes, but they are at enmity with the Kalmucks. The Cossacks who inhabit these regions, do not extend beyond the Don. The Kalmucks are, like their ancestors the Huns or Scythians, nomade, moving their tents in search of the best pasture. They are the best horsemen in the world; they almost live on horseback. It is stated, that their boots are made so short in the feet as to make it

almost impossible to walk in them, so as to make riding almost compulsory; they live principally on horse's milk and horse-flesh; horses forming the greatest number in their herds, of which their riches consist. It has been stated that besides horses, camels, and sheep, the number of their horned cattle amonnts to from six to eight millions; another account says, six millions are annually sold to the butchers; many are killed for their skins and tallow, their carcasses being allowed to rot on the steppes. The steppe cattle are a primitive and ancient breed; they are bad milkers, but good workers, and excellent fatteners; they are of comparatively small size, of an uniform gray or slate colour, with a bluish muzzle, a thick head, long horns (sometimes the horns are short, but this is the exception), thin short neck, broad arched back, slanting quarters, thick tail, with long hairs at the end; along the back, from the withers to the tail, there is a broad line of long and strong black hairs; these are also found on the thighs, and under the jaw. In summer these animals are almost hidden in the luxuriant herbage of these vast plains; but in the hottest part of that season everything is parched, the water courses are dried up, and nothing is left them but burnt grass and brackish water. In winter they fare still worse, when the ground is thickly covered with snow, and the animals are obliged to scrape it away with their feet to find their scanty nourishment, little or no provision being made for them.

In these steppes the rinderpest prevails enzootically, and from thence it spreads to the east and the west with fatal virulence. It is stated by the Russian veterinary professors, that it is never so fatal in the steppes, the losses not being, at the utmost, more than 40 per cent., and sometimes much less, it being often so slight that it requires care to recognise it; while in other countries the losses are generally from 90 to 95 per cent. Whether this resistance to the effects of this fatal pest arises from the hardy nature of this peculiar breed of cattle, or whether it is the result of their being inured, by being exposed to the influence of the causes of it, has not been determined. Spinola, who investigated the rinderpest on the spot, says in his account of it, that "the cattle frequently leave the steppes without showing any signs of the malady, but that they contract it on the bad roads from Perekop to Bessarabia, where 100,000 might be seen at one time, travelling westwards." We have had a similar account recently from the English Consul at Odessa, viz., that it breaks out amongst the oxen which bring the salt over the bad roads, with a hint that this is the possible cause of it,

and that great expectations are anticipated from the results of vaccination, which is now practised in Russia. This, I knew at the time to be a mistake, and that it was inoculation instead of vaccination. In this I am now confirmed by Professor Jessen, of Dorpat, who is the great inoculator of Russia, and who is in England at the present time. Professor Jessen is of an opinion that the rinderpest is of spontaneous origin in all steppes, or lands, having the same geological relations as those of Russia, viz., having been at a more or less recent geological period submerged by the sea, the soil being impregnated with salt, and having many salt lakes; conditions which do not belong to the prairies of the American Continent, or the lands in other countries, but might possibly exist in some parts of India.

As before stated, it is the opinion of some who have studied this malady, that in the European Steppes, as well as in the Danubian Principalities and Hungary, it is an imported malady from the Asian Steppes, and that if it were possible to extirpate it, they would be as free from it as any other country. Neither does the germ exist in the steppe cattle, as was believed at one time, for it has been proved that out of the steppes the steppe oxen are not subject to the spontaneous attack; and that when it breaks out amongst them on the roads they either bring the infection with them, or become infected during the journey. The rinderpest is known to have always followed in the wake of large armies, but only when Russian or Austrian troops were concerned in it, as they always drew their supply of cattle either from the steppes or the Danubian Principalities and Hungary. The following instances are from a memoir of the late Professor Renault. In 1793, England, Austria, and Russia, united their armies against France; the Austrian army crossed the Tyrol into Lombardy, it was followed by a large park of Hungarian oxen for their provision; the rinderpest prevailed amongst these animals, and they infected the cattle of the country where they passed. The following year the Austrian army combined with the Sardinian; this was no sooner effected than the rinderpest broke out in the kingdom of Sardinia, where it caused immense losses.

In 1795 two divisions of the Austrian army were sent into the Grand Duchy of Hesse Darmstadt and the Duchy of Nassau, to oppose the French army of the *Sambre et Meuse* and that of the Rhine. Immediately after, Bavaria, Wirtemberg, and Baden, were infected with the malady; these countries having been crossed by the Austrian troops to reach their destination; after which the Duchies of Hesse

Darmstadt and Nassau, where these troops sojourned, became likewise infected. What is more extraordinary is, that by rigorous measures being adopted by the Bavarian and Wirtemburg governments, the pest was actually confined to the villages situated on the routes assigned to the passage of the oxen for the supply of the troops, and that, moreover, it lasted to the end of the campaign. In 1805 the malady was imported into Poland, Lithuania, and East Prussia, by steppe oxen, which at all times form the provision of the Russian armies. In 1814 the rinderpest again appeared in the wake of the Russian and Austrian armies, and after devastating France spread to Belgium and Holland, and did not wholly disappear until 1817, since which time up to the present year, when it was imported either direct from England or through Belgium from Holland. But it has been asserted by non-contagionists that all these outbreaks are to be attributed to natural causes, such as the crowded state of large numbers of cattle, and the penury and hardships they are exposed to, inseparable from the casualties of large armies. To confute this we have the wars of the Peninsula, which lasted from 1808 to 1814, when both the English and French armies had large convoys of oxen for their supplies of cattle, and where those causes were quite as much in operation as in the armies of the North, yet not a single case of rinderpest is recorded. Again, for twelve years the French army were actively engaged in Algeria, where no provisions could be obtained on account of the little intercourse they had with the Arabs and the small number of cattle the country could furnish, when they were obliged to establish large parks of provisions near the towns, from which a certain number of beasts were sent with the expeditions. The beasts to supply the parks were brought from beyond the sea; Spain, Sardinia, Sicily, and the Roman States, were the nearest places from which they could be obtained. Nothing was prepared to receive these large convoys of cattle, which were left without shelter, exposed to all weathers in this dangerous and trying climate, the ground being marshy when wet with the rain, and closely packed as they were, they often stood up to their knees in mud and water, neglected by those who had the care of them; they were scantily fed on bad provender, disease, therefore, was rife amongst them, and the mortality great They were affected with diarrhœa, dysentery, cachexia, anthrax, acute and chronic affections of the lungs, which ravaged these parks and destroyed great numbers of animals; yet from the reports sent to the War Office by the veterinary surgeons who held appointments in the army of Algeria from

1830 to 1835, as well as from the researches specially ordered to be made by the Minister at War on this question, the typhus, or rinderpest, has never been known either in the cattle of the country, or those imported, when placed in the horrible conditions just described.

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 21.)

Having very briefly considered the two extremes, flat and concave feet, we must now make a few remarks upon a more serious disease than is generally found either in flat or upright feet: I allude to convex soles, or those designated *Pummiced Feet.* A pummice foot is one in which the sole is convex, or rounded upon the ground surface—just the reverse to what is seen in concave feet. The arch of the os pedis has been destroyed in a pummice foot, and has become either flattened or convex, as the case may be. This, without exception, is the most objectionable form of disease met with in the front foot of a horse when lameness is present. In feet of this sort, the horny structures are in a diseased state; the wall, or crust, is not secreted of a proper substance or elasticity, and malformation and disorganisation in all its worst forms are present in these cases as a general rule; nor do I believe that one of such cases in a hundred can be recovered. It was once said to me by a member of the profession, of very high standing, that he had cured a pummice foot, and he was at that time driving the horse. I replied that it was generally believed such cases were irrecoverable. The horn, in all the cases which have fallen under my notice, has been of the most brittle description, and easily broken into pieces; it has always reminded me, when these feet were brought to be shod, that the wall much resembled a thin piece of dry, hard wood, which had to be nailed or tacked to another piece of wood of equal brittleness, and that the operation could not be performed in any other way than by driving a number of nails so close to each other that the fibres of the wood became so injured that cracks were produced by every such nail. No better illustration than this presents itself to my mind at this moment. In shoeing feet of the kind above named, it

is evident that the farrier has to exercise a vast deal of care and attention, or he will not fix the shoe on in such a manner to ensure the safety of the animal. In some instances he is seen to drive a nail athwart the fibres, to get a sufficient hold. This system of driving nails is highly objectionable; it produces a sort of confined action, so as to prevent the proper functions of the foot being carried on; still, it does seem the only course left to the operator in some cases.

It need not be stated that a horse having a pummiced foot, or a foot having the least tendency to pummice, should be rejected as unsound.

Seedy Toes is another disease sometimes met with in feet which have imperfectly developed horn. No foot would be affected with this disease if the secreting glands were in a healthy condition. An unhealthy gland cannot secrete healthy material: this ought to be accepted as truth; indeed, there ought not to be two opinions on this question.

We don't always find seedy toes produce lameness. I have known a great number of seedy-toed horses travel well for many years, and free from lameness during the whole time. It is not at all times an easy task to diagnose a seedy toe in the examination as to soundness without removal of the shoe. Some cases are so slight that there is nothing to lead to suspicion; others are suspected from an altered appearance of the horny structures. Some, again, are extremely roughened in their exterior, whilst others are remarkably smooth; and immediately underneath the hair, at the coronet, there appears an unhealthy secretion. Striking the foot with a hard substance will give a fair idea of the state of parts hidden, but not at all times. The ears, too, of persons differ in sensitiveness. Seedy toes are said to be incurable. This I cannot subscribe to, as a cure has many times been effected. At the same time, I do not assert that this can always be effected, especially in cases arising from lameness, without much loss of time and judicious treatment. Seedy toes must in all cases constitute unsoundness. If, however, the disease is of a trifling description, and the animal pass through the ordeal of a good examination, he may be said to be practically sound.

Corns are next on the list for consideration. I know of no disease about which so many opinions exist as that of corn. Some gentlemen have said they would rather purchase a broken-winded horse than one with corns, while others assert their indifference to them.

A corn is not of much detriment, if any, to an animal, if of recent date, when found in an otherwise healthy foot, and

produced by an improper shoe. This has been demonstrated thousands of times by those practising as veterinary surgeons. Some are found in flat feet; others are seen in upright ones, both of which may or may not be troublesome affections to deal with: much depends upon predisposition, I think. Most of us have witnessed, with concern, the progress of a corn in the foot of a client's horse. I have found corns in the feet of some horses easy of removal, whilst in others great difficulty has been manifested; and in not a few they have existed as long as the animal lived. In some instances corns will produce lameness; in others the animal is never known to falter in his step, and never to be lame. These two opposites could not have been produced precisely in the same manner, and subject to the same causes, or it is more than probable the results would be similar. It is denied by some persons that corns are produced by the heel of the os pedis, and they give as a reason that they are not found immediately below the heel of that bone. I have several specimens lying before me, each demonstrating the fact of the heels of the pedal bone being in the position most anatomists have found them. One of these specimens belonged to a pony twenty-three years old, which I destroyed some ten years ago. I made the preparation for the purpose of showing the lower surface of the os pedis, leaving the wall and bars entire, merely removing the sole and frog. This is a concave foot; the distance from the toe of the wall and the toe of the bone measures exactly one inch, and although the specimen must have shrunk from dryness, I find the heels of the bone as close to the extreme angle of the horn as it is possible to be. So far as my knowledge of anatomy goes, I must adhere to the opinion that corns are generally produced by the descent of the heel of the os pedis, which is bruised by being rubbed by the shoe. Those who have carefully attended to the shoeing of horses must have witnessed the effects produced by having the front shoes closely fitted at the heels, especially if nailed too near the heels. It is no uncommon thing to hear a farrier exclaim that he shall leave a spring in the heel so offending. Be the causes what they may, it seems to be the ruling in all courts of justice that corns constitute unsoundness. The better plan is to examine in the manner so frequently recommended in these observations, viz., as to the *practical soundness* of the animal submitted for an opinion. This will, except in instances of warranty, enable both purchaser and examiner to keep clear of scrapes.

(*To be continued.*)

RUPTURE OF THE ŒSOPHAGUS OF A PONY, THROUGH A BALL HAVING BEEN IMPACTED IN IT.

By J. Cuthbert, M.R.C.V.S., Leeds.

Dear Sir,—I have forwarded, *per rail*, a portion of the œsophagus of a pony, with laceration and impaction of a ball. The history of the case is as follows:—The animal was a bay mare pony, aged, under thirteen hands, belonging to Joseph Conyers, Esq., of Headingley. The animal was in perfect health on Sunday morning, March 25th, but it was thought necessary that she should have a condition ball, and accordingly one was administered which they had by them. I afterwards found that the ball was one which had been procured from one of our "village quacks," and was as hard as a stone, too large by three times, and to make matters worse, it was wrapped in coarse paper with the ends sealed with wax.

The ball was given about 8.30 a.m. on the 25th. The groom told me he had some difficulty in giving the ball as the pony coughed and tried to dislodge it, but failed to do so. He then reintroduced his hand and pushed the ball down as far as he possibly could. During the day the pony began to swell about the throat and neck, and had no inclination for food or water. At night I was requested to see the animal, and at 9 p.m. I found her standing with her head hanging down, the breathing heavy and sonorous, the pulse quick and weak, the breath fetid. The neck was very much swollen, extending from the root of the ears down to the sternum, with slight emphysema about the head. The other swelling was œdematous. I told the owner that, in my opinion, the œsophagus was ruptured, which proved correct. I administered about half a pint of warm water, which was swallowed with much difficulty, afterwards gave Ol. Lini ℥viij, and ordered fomentations to the parts, which were continued up to her death, as she only lived seven hours after my first visit.

I made a *post-mortem* examination, and on cutting through the skin along the course of the trachea, there seemed to exist much effusion. I soon perceived that a rupture had taken place, as there was a dirty gray fluid mixed with the semblance of food in the cellular tissue. I took out a portion of the œsophagus with the ball lodged opposite, com-

mencing with the fifth ring of the trachea, which I have sent you entire, as I thought it would probably not be uninteresting to you. I was rather surprised that there was an absence from the first of the symptoms generally observed in choking.

I am, dear Sir,
Yours faithfully.

To Professor VARNELL, Royal Veterinary College.

REMARKS ON THE ABOVE BY PROFESSOR VARNELL.

I not only consider that the above case should be published as one having some interest in a practical point of view, but could wish that the owners of horses throughout the country might have an opportunity of reading it with the few remarks I append. Not a few horses have been lost through the administrations of nostrums concocted by empirical practitioners, as well as by vendors of horse and cattle medicine. The former are commonly ignorant of the effects, whether for good or harm, of the medicines they give or sell to be given to animals; and the latter, as might be expected, look upon them as so much merchandise, and when the drugs are out of their hands are not responsible for any mischief they might do. But this is not all. I have, myself, met with several instances, and I have no doubt but that very many have been witnessed by others, in which choking, and in some cases as in this, actual death has been caused by balls being given too large, or too hard from long keeping, or from being wrapped in coarse thick paper. Such occurrences rarely, if ever, take place in the practice of the educated veterinary surgeon. He is acquainted with the physiology of deglutition, and knowing the capacity of the œsophagus, he is particular in the preparation of the medicine he prescribes, and the mode of administering it; this knowledge not being possessed by those who have not made anatomy and physiology their study, and which we should suppose the public would infer, ought to be sufficient to deter the owners of animals from employing such persons, or in purchasing their compounded medicines. There can be no doubt they would always find it more to their interest to pay a respectable veterinary surgeon a liberal fee for advice and such medicine as he may deem, in any particular case, necessary, than to resort to this expedient.

With reference to the case itself, Mr. Cuthbert says, "that he was surprised at there being an absence of the usual symptoms of choking." May not these, I would ask, have

passed off previous to Mr. Cuthbert seeing the pony? I should rather infer that they had; at least my experience in similar cases leads me to this conclusion. If such was not the case, there ought to have been some peculiar pathological condition of this organ to account for it.

TUMOUR IN THE RECTUM OF A COW.

By T. J. Poulton, M.R.C.V.S., Gravesend.

On the 8th of March I forwarded the posterior portion of the rectum of a cow to Professor Simonds. The subject from which it was taken was an aged animal, the property of a dairyman of this town. It appears that on the night of the 6th inst. the cow, which was near her, broke down the partition that separated them, and trampled upon and otherwise injured the subject of this note. The next morning, on the owner going into the cow-shed, he observed a considerable quantity of blood and urine behind the animal; but he evidently exaggerates when he says, "that it was up to the tops of his shoes."

A farrier was called in, but in consequence of the animal getting worse, and the owner being in a fix where to find a place of interment, I was requested to attend.

I found the animal down and unable to rise, the eyes protruding and amaurotic, and a viscid mucus escaping from their inner canthus; the buccal, conjunctival, and Schneiderian mucous membranes were of a pallid hue, the coat staring and dry, the pulse quick and feeble, the extremities cold. The owner stated that she had frequently got up and down, and violently struck out with her left hind leg in a backward direction. There was suppression of the alvine evacuations, frequent turning of the head at times, violent tenesmus, and while voiding her urine, a copious discharge of blood took place from the rectum.

The cow was slaughtered.

Post-mortem examination.—A slight effusion of blood existed under the serous membrane, lining the pelvic cavity, and extending up to the kidneys, but it was only superficial. The thoracic and abdominal viscera, with the exception of the part forwarded, were of their normal character. I much regret having made an incision into the rectum, but when it exposed the hæmorrhoidal tumour, I forwarded it at once to the College. If you should think this of sufficient interest

for the pages of the *Veterinarian*, I should feel obliged by your remarks being appended, as to the character of the tumour, and the length of time it must necessarily have taken in its growth.

[The tumour was situated about two feet from the anus, in the upper portion of the intestine. Its length was about nine inches, and its width from four to five inches. It was made up of coagulated blood, extravasated between the peritoneal and muscular coats of the intestine.

In connection with the tumour, and protruding through a rent in the mucous membrane into the intestinal canal, was a coagulum of blood of sufficient bulk materially to interfere with the passage of the fæces. Both this coagulum and the rent were evidently recent, and it would appear from the history of the case, that they had resulted from the injury to which the animal was subjected.—Eds.]

LARGE NUMBERS OF PARASITES—TÆNIA AND STRONGLES—FOUND IN THE ILIUM AND CÆCUM OF A MARE.

May 1865

By the Same.

On the 18th inst. I was requested to attend professionally an aged bay mare, which had for the last six hours been attacked with a kind of colic. I found the animal down and unable to rise; the Schneiderian, buccal, and conjunctival membranes were of a pallid hue; the pulse 56 and weak; a peculiar anxious expression of countenance was evinced, with frequent turnings of the head to the side; the ears, legs, and muzzle were warm; the coat staring and dry; the animal frequently grated her teeth, and appeared to be a perfect skeleton. The pain was not continuous, but appeared at intervals, during which time she would eat with a great deal of excitement some hay which was given her, even up to the period of dissolution. The usual antispasmodic and other medicinal agents were administered, and backraking and the use of clysters, resorted to, but without any perceptible benefit. She died on the morning of the 19th.

Post-mortem examination.—Upon laying open the alimentary canal, in the stomach no trace of any disease could be detected; but on exposing the duodenum, large quantities of what I consider to be tape worms were found, and the in-

testine presented a sacculated appearance, the sacs being filled with these entozoa, while the constricted portions contained a viscid mucus of a peculiar and offensive odour.

On laying open the cæcum, nothing more could be observed; but on makiug a longitudinal incision along the colon, myriads of small entozoa were seen both attached to its internal mucous coat, and also mixed with the fæcal contents. I also observed about twenty of what appeared to be strongles, having white heads and tails and black bodies. These were partly covered by fœcal matter, and on exposure to the air soon died.

The ingesta contained in the cæcum, colon, and rectum, was perfectly dry, which I consider was due to the entozoa being in such large quantities as found in these intestines.

I believe that if we were made more fully acquainted with the symptoms, as declared by the animal, we should not be warranted in treating our patients when parasites appear in such large quantities as were here present.

I have forwarded these few remarks, together with some of the parasites, to Professor Simonds, hoping the case may be deemed worthy of insertion in your valuable journal.

[The parts forwarded by Mr. Poulton consisted of the terminal portion of the ilium, and a small piece of the cæcum. The ilium had been long diseased; its coats were thickened, and its muscular coat had an appearance more like that of the œsophagus than of intestine. The calibre of the gut was so much diminished that aliment could have passed on only with great difficulty. It contained a large number of *Tenia perfoliata* and a few strongles. So numerous were the tenia in this intestine, and also the cæcum, that they would have filled a half pint measure. We were led to the inference that during life they had inhabited the small intestines, and after death had passed into the cæcum. The hypertrophy of the coats of the intestine appeared to us to have been the result of their presence.—Eds.]

OBSCURE CASE OF PERICARDITIS, COMPLICATED WITH SEVERE FRACTURE OF THE HUMERUS.

By James Thomson, M.R.C.V.S., Aberdeen.

The particulars of the following case may not be uninteresting to many of your readers, while your own matured

judgment may throw some light upon the subject, whereby we may the more readily diagnose and be prepared to alleviate the many complicated diseases we are called upon to treat.

On 9th February, 1866, a well-bred mare, aged, was taken out of the stable for the purpose of being exercised, when a sudden flash of light from an opposite door darted across her path, which so frightened her, that she instantly wheeled about and struck the corner of a lorry with such violence as to displace it two feet.

I was shortly in attendance, and on examination found that the humerus had sustained a compound fracture with extensive laceration of the surrounding muscles. I gave no hope of a cure being effected, and recommended the owner to have the animal destroyed, to which, however, he would on no account consent, she being a great favourite.

Under the circumstances I extracted some splinters of bone, had the wound dressed and treated in the usual way by fomentations, and at the same time I prescribed an aperient draught.

I continued my treatment up to the 10th March, when she appeared in her usual state of health, eating the mashes and hay with her usual relish.

On the 11th I saw the attendant, who told me that the animal did not eat her mash in the morning, and had gone off feeding altogether. I could get no admittance to the stables at that time (3 p.m.), so called again about 8 p.m., when to my disappointment and surprise I found the mare dead.

I then suspected that death had resulted from some other cause than the fracture. I may mention that I had had the mare in slings for three weeks previous to her death.

Post-mortem examination.—On removing the near fore-leg, and dissecting away the muscles, I found the humerus had sustained an oblique fracture in its superior third, and the external and internal tubercles were split longitudinally, corresponding with the bicipital groove. Around the parts there was a considerable amount of a grayish offensive fluid.

After the mare had been in the slings a week, I observed a swelling about the middle of the sternum, but did not think that at all unusual, as we often meet with swellings (abscesses) in consequence of the slings. However, on this swelling being cut into, a small quantity of pus came away. But I also found a small opening communicating and corresponding with the superior surface of the sternum to which is attached the pericardium.

Removing the ribs, I found the pericardium enormously distended by a straw coloured limpid fluid; both its surfaces were agglutinated and considerably thickened, more especially at its inferior part. A coating of lymph, to the extent of a quarter of an inch, covered the whole exterior surface of the heart, which was easily detached. But there was no adhesion between the pericardium and heart. The substance of the heart was considerably hypertrophied; the lungs were healthy; the liver dark coloured and friable. All the other viscera were healthy, although pallid. Previous to making a *post-mortem* examination, I came to the conclusion that she had died of heart-disease, more so from the suddenness of the death than from any symptoms observable of pericarditis. Its insidious approach, and the absence of all recognised symptoms of heart-disease is all I can offer by way of excuse for my failure in diagnosing it.

Is there any connection between the shock to the system at the time the animal received the injury, and the commencement of pericarditis? Or was it a purely idiopathic disease? Previous to the accident the mare was the picture of health, and while under treatment she seemed at times to be in pain, which was more like that of gripes than any symptoms of heart-disease.

SUPPOSED CASE OF FALSE ANEURISM.

By G. M. Marshall, Dungannon.

On the night of the 11th of February last I was called to see a gray posting mare, the property of Mr. Robert Benson of this town, the messenger stating that she was "terribly swelled." I lost no time in seeing her, and found her with a large swelling under where the collar had lain, extending half way up the neck, and back behind the elbow to nearly the flank. The latter part of the swelling might be compared to a bladder three parts filled with water when lifted by the hand. The pulse was weak, and the visible mucous membranes pale. On interrogating the owner who had driven her, he said she had done her work as well as usual, being at all times a free worker, until within two miles of home when she faltered and would not go beyond a walking pace even when the whip was applied. She was, therefore, gently walked into town, and when put into the stable was found as above stated.

I immediately gave her a diffusible stimulant, and in a few

hours she began to rally, and was inclined to take some food. I ordered cold applications to be applied to the swelling in the neck, which now extended to her flank and under the abdomen, and had become apparently œdematous. I directed her to have some cordial diuretic medicine given in her mash every night.

Feb. 20th.—I scarified the abdomen, whence issued serum, as in a common case of anasarca. The scarifications were repeated twice afterwards, and the swelling gradually subsided, the neck, however, remaining in *statu quo*, and feeling rather hard. The animal's general health is good.

24th.—I inserted a seton in front of the breast, which reduced the swelling of the neck.

March 10th.—The animal went a journey of six miles to day.

11th.—She went a journey of nine miles, carrying four passengers. She is feeding and doing well.

Remarks.—From the character of the swelling being neither œdematous or emphysematous, and its sudden appearance, I looked on it as a case of "diffused false aneurism."

Probably some of your numerous correspondents may have a few remarks to make on this, *to me*, a novel case.

THE PROPOSED VETERINARY MEDICAL BILL.

1. By J. Horsburg, M.R.C.V.S., Dalkeith.

Sirs,—A short time ago a printed paper came into my hands, signed by the President and Secretary of the Royal College of Veterinary Surgeons, headed, "Reasons for a Veterinary Medical Act."

It is now more than twenty years since the veterinary profession presented a petition to the Queen's most excellent Majesty and Council for a Charter of Incorporation, under the title of the Royal College of Veterinary Surgeons. One of the reasons for this was said to be: "That the veterinary profession is not recognised by law, nor have its members any power in restricting the inroads of unauthorised and uneducated persons; and that the operation of these causes tends very much to impede the progress of veterinary science and the respectability of its members. Wherefore, for the removal of these and such like grievances, your Majesty will be pleased to grant a Royal Charter of Incorporation, that it may become a recognised profession, have a College of

Examiners, and be better able to advance the onward progress of veterinary science."

The Charter was granted, and if I understand it, no man had a right to practise as a veterinary surgeon unless he had attended the proper schools then in existence for teaching the profession; and no one afterwards had a right or title to the name of veterinary surgeon unless he had been examined by and passed as such by the board of examiners appointed by the Council of the Royal College of Veterinary Surgeons. Now, certainly there are means of carrying out this Charter, or what is the use of it? Why not apply the law as it now stands in the Charter? In the reasons sent it is said: "*It is not* intended to make the Veterinary Medical Act retrospective in its provisions, nor to prevent any one of those who have assumed the name of veterinary surgeon to continue to practise and call themselves such." Unless Clause IV be at once expunged from this Bill, I hope every sensible veterinary surgeon will take every means in his power to prevent its passing into law.

The Editors of the 'Veterinarian.'

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2. By W. Barry, M.R.C.V.S., Lichfield.

In perusing the numerous letters which have appeared in the *Veterinarian*, opposing the fourth clause of the "New Veterinary Medical Bill," I think the writers take a wrong view of its purpose. Messrs. Dray, Cuthbert, and Broughton, of Leeds, say that it will admit between twenty and thirty blacksmiths and farriers in that borough. "W. H." says that it will give the title of veterinary surgeon to about 3000 farriers, who have falsely assumed it.

As I understand it, it will do nothing of the kind. These people, in the present state of the law, can and do assume that title with impunity, as we have no penal enactment to prevent them.

Now, the fourth clause of the proposed Veterinary Act simply leaves these persons in exactly the same position in which they are. The public will have the same facilities for distinguishing between qualified and unqualified practitioners as now, and I think it rests with each member of the College to publish in his own neighbourhood the names of those that are not members of the College.

The third clause of the Act provides against the continuance of the evil we now complain of after the 1st of October next, so that the present race of pretenders will

become yearly less numerous, as they are already becoming less influential.

Let us be satisfied with this prudent and well-considered measure, as, perhaps, by asking for too much from Parliament we may get nothing.

With regard to the many suggestions thrown out for a practical examination of those unqualified practitioners who wish to be admitted to the profession, I think there already exist sufficient facilities to those who are really in earnest in their endeavours, and we well know that our Board of Examiners always treat such persons with consideration. But I cannot see the policy of lowering the standard of knowledge necessary for the obtainment of a diploma. If these gentlemen do not possess, and will not take the trouble to obtain, that modicum of scientific knowledge considered necessary, why should we be so anxious to associate ourselves with persons of inferior attainments? In my opinion this would be a step in the wrong direction, and tend to increase the evils of quackery and empiricism, from which, alas, the *profession* itself is not wholly free. It is certainly to be regretted that those gentlemen who hold an Edinburgh diploma do not form a part of the body corporate. We should be all proud to welcome them to help us carry out the motto of the College, *Vis unita Fortior*; but I think it rests with them to take the proper measures for that purpose.

Having made these few remarks, I will not further occupy your valuable space.

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3. By "Y. Z."

Allow me through the medium of your valuable journal, to pass a few remarks on the fourth clause of the "New Veterinary Medical Act." On a former occasion (vide *Veterinarian*, Vol. XXXV, p. 649), I addressed a few lines to you "On the Examination of Practitioners," and then advocated that those only should be allowed to present themselves for a practical examination for a diploma who had served an apprenticeship, and been in practice a certain number of years, on the payment of the fees. Now, as regards the fourth clause, I think it would be unjust to the chartered body, if passed in its present form. Unjust to the veterinarians of the Edinburgh College who are not members of the chartered body, many of whom hold Her Majesty's commission in cavalry regiments; and also to a number of respectable practitioners who have always been recognised by the public as

veterinary surgeons, although not holding a diploma, yet have studied and conducted their business in a professional manner, and are as jealous for the respectability of the profession as any M.R.C.V.S. First, by all means let the corporate body be protected. Secondly, I would suggest that all holding the diploma of the Edinburgh Veterinary College should at once, without any further examination, be admitted as M.R.C.V.S. Thirdly, as regards those who hold no diploma, I beg to say, that as the fourth clause at present stands, it would open the portals to a class of men who are not fit, either from position, education, or practical knowledge, but "who may be sharp enough (as your correspondent W. H. justly remarks), to style themselves veterinary surgeons before 1st October, 1866, and in practice as such on that date." To meet which, I would suggest, that there should be a practical examination open to such as may have been in practice—say five years—and during such time to have assumed the title of V.S., on payment of a fee any time within twelve months after passing of the "Veterinary Medical Act;" it being optional with the Board of Examiners to reject any candidate from want of education and social respectability. I firmly believe by adopting some such course, you would not have such a number as you might imagine willing to stand the ordeal. Now, to conclude, I will give you a case in point. Within the last two months, a man, not thirty miles from where I write, has advertised himself as a veterinary surgeon who never assumed the title before. A few years back he was a shepherd in a gentleman's employment, and since leaving that situation, has been a castrator of horses and cow doctor in this and the neighbouring counties. He now "*may be consulted on the soundness of horses, &c.,*" and attaches V.S. to his name, and this in a populous town where a M.R.C.V.S. resides. Now, were this act to pass with the fourth clause unaltered, this man would be all right as regards his assuming the title of veterinary surgeon. Hoping you will excuse my encroaching so much on your time and space, I will conclude with this motto—

"Fiat justitia, ruat cælum."

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4. By M. E. Naylor.

With regard to this Bill, I am decidedly of opinion that the fine for the illegal assumption of the title of veterinary surgeon is too low, and would not have any effect in deterring those who find they can make the impositions pay.

The Clause No. IV is very objectionable, and would be better left out or replaced by one stating upon what terms useful practitioners, who are at present practising in a district, might become legally qualified to take the title of veterinary surgeon without being two years at one of the recognised schools. Of course an examination must take place to prove their competence.

But the thing most wanted to improve our position and insure a better set of young men as pupils, will be to extend the time that the pupil is required to attend the schools, and to insist that they should previously have passed the preliminary examination.

If such a clause were introduced into the Bill as would compel the professors at all the colleges to adopt a uniformity on this point it would do much to elevate the profession.

The examiners should also demand some *practical tests* of the competency of the students before they are allowed to obtain their diploma.

It is not desirable that the English schools should be in arrear of the other veterinary schools of Europe in this respect.

If a better education were made a *sina quâ non*, we might expect the young veterinarians to seek to become members of scientific institutions and societies rather than the frequenters of the public-house bar. I allow that the latter sometimes *appear* to get on, because they bring themselves down to the level of a certain class of our employers. Yet they are not looked upon or respected as members of our profession ought to be, and are a great drawback upon those who are the friends of progress and have the tastes and acquirements of gentlemen.

Facts and Observations.

Royal Agricultural College, Cirencester.—Mr. C. Hunting, jun., has been appointed Professor of Veterinary Medicine to the above institution.

Mr. R. H. Dyer, M.R.C.V.S., Torquay, has received a commission from the lord lieutenant of the county, appointhim "Honorary Veterinary Surgeon," in the 1st Devonshire Light Horse V. C.

Gregarinæ.—The *Quarterly Journal of Science* states that the microscopic examination of the fibres of meat cut from animals which had died of the cattle plague has brought an interesting parasitic structure before the notice of naturalists. In the ultimate fibres of such animals, and also more rarely

in healthy individuals, exceedingly minute, elongated, saccular bodies with granular contents, and a finely fringed envelope, are to be observed, and there has been much question as to whether these are entophytes or entozoa, or anything else. Meisner appears to have first described such bodies in 1839, having observed them in the muscles of a mouse. The best account of them, however, is that of Rainey in the *Philosophical Transactions* of 1857, who, though he mistook them for the young forms of cistoid entozoa, described them very accurately, and observed that they gave rise to small ovoid bodies, which he carefully figures. These observations were made in the pig. There can be little doubt that the parasites are *Gregarinæ*, and that the smaller ovoid bodies are their "psorosperms," or "pseudo-navicells," though Dr. Beale and Dr. Spencer Cobbold, who have lately been examining those from the cattle plague meat, do not give a definite opinion. The most unpleasant part of the matter is, that we are all probably frequently eating these minute parasites without being aware of it; and may, perhaps, be unconsciously infested by them ourselves, since they do not produce any apparent symptoms in the animals in which they occur.

Flock of Sheep Poisoned.—It is stated in the *South Eastern Gazette* that a number of sheep were poisoned by eating a shrub known as *Andromeda floribunda*. The gates of the pleasure-grounds of Mrs. Deacon, of Mapledon, having been left open, a flock of thirty-eight sheep, which were grazing in a meadow contiguous, strayed in and ate freely of the shrub. Thirty-seven showed symptoms of poisoning, and only nineteen of them recovered.

Utilising of Sewage.—The *Builder* gives a minute account of a system of deodorising and utilising sewage which has been invented by M. Chodzko, Professor of Chemistry at the College of Fribourg. It is first treated with certain chemicals, prominent amongst which are magnesia and sulphate of iron. The water is then evaporated by allowing it to run over piles of faggots, during which process it is submitted to the fumes of sulphurous acid gas, which completes the disinfecting process, and fixes the volatile salts of the manure. The experiment has been tried on a large scale at the camp of Chalons, where the emperor has provided all the necessary appliances for the work. So far as the experiments have yet been made, they have been entirely successful, and the manure produced has been found of two and a half times the value of that produced by the ordinary method from the same material.

THE VETERINARIAN, MAY 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

RESIDENCE OF PUPILS WHILE PURSUING THEIR STUDIES AT THE VETERINARY COLLEGE.

WE have always felt convinced that the above subject must awaken an anxious inquiry in the minds both of parents and guardians of youth, on the latter being for the first time removed from home and its associations, and entering upon that which is somewhat novel to them, and pregnant with the consequences of the future. "As the twig is bent so grows the tree." In early life the impressions we receive are generally abiding, whether for good or ill. How desirable then is it that those directions should be given, and those principles inculcated in youth that shall tend to build up the mind, and establish it in all that ennobles man. By example it is that very much of this is effected; and a corresponding advantage, without controversy, arises from the associating together of persons in the pursuit of the same object. Yet we are not ignorant of the fact that without a Mentor to counsel and to guide, or without a controlling influence, evil oftentimes creeps in.

We are led to make these observations from its having been intimated to us that it is the intention of Professor Tuson, of the Royal Veterinary College, to establish a hall or residence for pupils during their attendance at the College, similar to what obtains in connection with the Universities and London Colleges generally.

It is with pleasure we append a circular of the proposed plan, for in every sense we consider it most desirable, and we hesitate not to give to it our warmest support, having no apprehensions as to the successful result, from a belief that the Professor will be encouraged in his laudable endeavour to establish that which is so eminently conducive of good to the rising members of the profession, and from which the profession as a whole must be ultimately benefited. It

is another step, and an important one, taken in the way of progress.

12, St. Paul's Road, Camden Town,
London, N.W.; *April*, 1866.

Dear Sir,—Attached to the Universities, to Colleges, and to the leading Medical Schools, there are halls or residences, presided over by a Professor, in which Students reside and are prepared for their collegiate studies. I beg to acquaint you that I intend endeavouring to carry out a similar plan with reference to the Pupils attending the Royal Veterinary College. To those availing themselves of the system, it secures comfort and regularity as regards home, meals, &c.; punctuality and regularity in attendance on College and home studies, and a supervision or control over general habits and conduct. To effect these objects certain hours would be fixed for examinations, private study, meals, and recreation; and although strict discipline would be maintained, every endeavour would be made to assimilate the comforts and freedom of the Hall to those of a private residence. In addition to residence during the winter session, it is proposed to receive boarders into the Hall from the 1st of May until the 31st of July. Pupils entering or remaining in residence during the summer session could be prepared for the Matriculation Examination of the Royal Veterinary College, and could attend a Laboratory Course of Practical Chemistry.

Should you approve of the undertaking above described, I shall feel much obliged by your informing me of the same, and whether you think it probable you can kindly recommend any residents. No positive arrangement will be made until I have received the names of a certain number of intending boarders.

I am, dear Sir,
Yours faithfully,
Richard V. Tuson,
Professor of Chemistry in the Royal Veterinary College.

LECTURE AT THE ROYAL COLLEGE OF VETERINARY SURGEONS.

We have the pleasure to announce that Professor Tuson will deliver a lecture on "Putrefaction," at the Royal College of Veterinary Surgeons, Red Lion Square, on Thursday, the 3rd of May, at 3 o'clock, p.m., to which Members of the College are invited.

Extracts from British and Foreign Journals.

ON THE NATURE OF THE ENTOZOOID ORGANISMS WHICH OCCUR IN ANIMALS AFFECTED WITH THE RINDERPEST.

A PAPER was published by Dr. Lionel S. Beale in the 'Medical Times and Gazette' for January 20, 1866, on certain Entozooid Organisms which occur very constantly in the voluntary muscular tissue of beasts affected with the rinderpest, and in that of the heart. Dr. Beale does not assert that these bodies are really animals, but contents himself with giving their history—for they have been observed for some years in various animals in an unhealthy or in an apparently healthy condition, and with describing their minute structure. Dr. Cobbold, who has devoted so much time and labour to the study of the creatures inhabiting the intestines of animals, is decidedly of opinion that the organisms of which we have just spoken are not animals, but is inclined to refer them to the vegetable kingdom, in the belief that they are sacs of *Psorospermiæ*, if these bodies are really Algæ, as Robin supposes. No true Alga, however, has ever been found in the tissues of animals, all the supposed species which have been described, including fish mildew, and its allies, being decidedly referable to Fungi.

We have already adverted to a notion which was put forth last autumn, of a possible connection between the cattle plague and the red rust which was so prevalent. Last autumn was, however, by no means exceptional, for we have frequently seen the grass as yellow with the rust-spots, and have heard conjectures as to the possibility of its causing cancer and other complaints to which stock of various kinds are subject. There is not, however, a particle of evidence to show that any of the truly parasitic leaf fungi are capable of establishing themselves in animal tissues. An anonymous correspondent in the same number of the 'Medical Times,' who styles himself a provincial physician, while hinting at the possible connection between rust and rinderpest, says distinctly that though the spores could be readily enough traced in the mucus of the air-passages of the dead animals, nothing further confirmatory of the notion could be elicited, or, in other words, there was no evidence of these bodies having germinated and penetrated the subjacent tissues.

There are, however, fungi which luxuriate in animal tissues, though they are not always confined to them. The fungi

which attack the caterpillars of *Hepialus virescens* in New Zealand, and those of various moths and insects in other parts of the world, not excepting our own island, belonging to the curious tribe of *Sphæriacei*, are a familiar example of fungi addicted to the animal kingdom, specimens being often brought home from our southern colonies as curiosities. It is pretty certain that many of these attack the larvæ while living. But it is more especially different kinds of moulds which commit cruel ravages on living animals. The disease, which is the scourge of silkworms, arises from the attack of a very beautiful mould, *Botryosporium Bassianum*, which is probably identical with *B. diffusum*, a species extremely common on decayed stems of herbaceous plants, and there are several fungi of the same group which seem very indifferent as to their place of growth, and flourish on living animal tissues quite as readily as on decayed vegetables. We must not omit, moreover, the fungi to which some cutaneous diseases in man are due, or the fish-moulds which are the pests of the aquarium. Now it is very possible that the spores of any of these might be taken either into the lungs with the air we breathe, into the stomach with the water, or into the pores of the skin, and at length establish themselves in various parts of the body. The common occurrence of moulds in the urine, Sarcina in the stomach, and Penicillium in the air-passages, supplies instances familiar to every one who has paid the slightest attention to the subject. It is not therefore impossible that the organisms in question may really be a condition of some fungus, though from the numerous instances in which they have been found, where the rinderpest was not in question, there is no reason to believe that they are the cause of the disease, though they may be a consequence, from the diseased tissues affording a peculiarly favorable nidus for the development of the mould.

The ciliated surface, were it really shown that the processes are vibratile as those on the organs of some *Algæ*, would be opposed to this notion, but they may be only of the same nature as those which occur on the spores of some truffles, and other fungi. The walls of the sac should be tested to determine whether they are composed of cellulose, though this would not be absolutely decisive, as cellulose occurs in some undoubted animals, as for example in *Ascidia*. Dr. Beale has tried to obtain a further development, and it is very desirable that further attempts should be made in this direction, those specimens being chosen in which the bodies lie freely amongst the muscular fibres. It is curious, however, that at present, so far as the rinderpest is concerned,

it is only in the striated fibres of the voluntary muscles and in those of the heart, which are similar in structure, that they have at present occurred, and not in the involuntary non-striated muscular tissue, whose position and structure would seem better calculated for their development. The matter is, however, in every point of view worthy of deep investigation, and it is quite as interesting to the botanist as to the zoologist, and demands the attention of all who regard either animal or vegetable pathology.—*The Gardeners' Chronicle and Agricultural Gazette.*

THE FRENCH GOVERNMENT COMMISSION ON TRICHINOSIS.

Professor Delpech, of the Paris Faculty of Medicine, and Professor Reynal, of the Imperial Veterinary School at Alfort, who, as already stated, were charged with a mission to study the above-named disease in Germany, both in human beings and mammals, have just presented to the Minister of Agriculture, Commerce, and Public Works, a report of the results of their investigations at Huy (Belgium), Hanover, Magdeburg, Berlin, Halle, Dresden, Leipsic, and Mayence. To render their investigations more complete, they solicited and obtained the co-operation of most of the eminent German physicians who had made the disease in question their especial study. The chief practical facts ascertained are as follow:—The epidemic trichinosis lately prevalent in Germany has now almost entirely disappeared. The mortality was everywhere slight, except at Hadersleben. At Zwickau, Seltendorf, and Sommerfeld, there were 88 patients, not one of whom died. In every case the disease was caused by eating imperfectly cooked pork containing trichines, a case of rather frequent occurrence in Germany. In Hanover, in twenty-one months, out of 25,000 pigs, 11 were found full of trichines, 16 out of 14,000 in Brunswick, and 4 out of 700 in Blakenburg. The animal while living shows no signs of their presence, nor can they be detected in the meat with an ordinary magnifying glass, but a powerful microscope renders them distinctly visible. The utility of a microscopic inspection of pig's flesh by competent observers is so evident that many of the German governments have rendered it obligatory, and MM. Delpech and Reynal would not hesitate to recommend it in any country contaminated with trichinosis, but they think it unnecessary in France, where no case of

the disease has yet been noticed. In Germany the hospitals receive many patients suffering from this affection: during last year there were 13 at Magdeburg, of whom only one died. *Post-mortem* examinations have also shown, among persons who died from other diseases, numerous cases of old trichinosis cured by the encystment of the parasites. The proportion of these at Leipsic has been about six per hundred. In places where the complaint prevails, the rats which infest slaughterhouses are found to have it, as proved by Leisering at Dresden, Adam at Augsburg, and Roll at Vienna. Since their return, MM. Delpech and Reynal have examined many of these animals as well as pigs without finding a trace of trichines. Consequently, there is no reason in France for any person to refrain from eating hogs' flesh, especially when so thoroughly cooked as is usual among the French. In Germany, on the contrary, many of the peasantry eat it almost raw or only smoked. The most timid may safely eat the heart, kidneys, brain, and fat of pigs, as those parts never contain trichines. MM. Delpech and Reynal assert, as an undoubted fact, that a temperature of 75 deg. C. (167 Fah.) is sufficient to kill trichines. Meat thoroughly salted is also perfectly safe. Smoke-dried sausages, which have been kept a long time, are considered free from danger, but the wisest plan is to give them a good boiling. The authors of the report attribute the spread of the disease among pigs to the fact that they are foul feeders and will eat any offal, such as the dead bodies of rats and other animals, which are now known to be liable to trichinosis. Great care ought therefore to be taken to keep such things out of their reach. MM. Delpech and Reynal likewise advise all experimenters never to throw away trichinised flesh, but to burn it as soon as their examination is completed; for a fragment of it carelessly exposed might be eaten by a rat, the rat devoured by a pig, and this last become the cause of fatal accidents. They recommend farmers to be very cautious in feeding their pigs, to avoid giving them offal flesh without first boiling it; to destroy rats and other small carnivorous animals; and never to leave human or other excrements in places where pigs can go. The government has deemed it expedient to publish at once the above abstract of MM. Delpech and Reynal's report, which it has also submitted to the consideration of the Consultative Committee of Public Health.—*Galignani.*

THE CATTLE PLAGUE.—THE CONSOLIDATED ORDERS IN COUNCIL.

From Supplement to the 'London Gazette.'

At the Council Chamber, Whitehall, the 24th day of March, 1866. By the Lords of her Majesty's Most Honorable Privy Council. Present: Lord President, Duke of Somerset; Lord Stanley of Alderley, Sir George Grey, Bart., Mr. Milner Gibson, Mr. Bruce, Mr. Goschen.

Whereas by an Act passsed in the session of the 11th and 12th years of her present Majesty's reign, chapter 107, intituled "An Act to prevent until the 1st day of September, 1850, and to the end of the then session of Parliament, the spreading of contagious or infectious disorders among sheep, cattle, and other animals," and from time to time continued by divers subsequent Acts, and lastly by an Act passed in the session of the 28th and 29th years of the reign of her present Majesty, chapter 119, it is (amongst other things) enacted, that it shall be lawful for the lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time, to make such orders and regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such order or orders of sheep, cattle, horses, swine, or other animals, or of meat, skins, hides, horns, hoofs, or other parts of any animals, or of hay, straw, fodder, or other articles likely to propagate infection, and to make any other order or regulations for the purpose of giving effect to the provisions of the said Act, and again to revoke, alter, or vary any such Orders or Regulations; and that all provisions for any of the purposes aforesaid in any such Order or Orders contained shall have the like force and effect as if the same had been inserted in the said Act.

And whereas a contagious or infectious disorder, generally designated as the "cattle plague," has lately appeared and now prevails amongst cattle in England and Wales:

And whereas divers Orders have been made by the Lords of the said Council in relation to the cattle plague, and it is expedient to consolidate, amend, and add to the said Orders:

Now, therefore, the Lords of Her Majesty's Privy Council do hereby, in exercise of the powers given under the said Act so continued as aforesaid, order as follows:

PRELIMINARY.

1. Part I of this Order, with the first schedule hereto, and the regulations 26 and 27 of Part II, which relate to the isolation of infected places, and the rules with respect to infected places, shall come into operation immediately. The residue of this Order shall not come into operation until the 16th day of April, 1866. The whole of this Order shall remain in force from the time of its coming into operation until it is revoked or altered.

2. This Order shall apply to England and Wales only.

Part I.

DEFINITIONS.

3. In the construction of this Order the following terms shall have the meanings hereinafter assigned to them; that is to say—

"Person" shall include a body of persons, corporate or incorporate:
"Cattle" shall mean bull, bullock, cow, ox, heifer, or calf:
"Animal" shall mean cattle as above defined, sheep, lambs, goats, and swine:
"Disease" shall mean the cattle plague:
"Diseased" shall mean affected by the cattle plague:
"England" shall include Wales:
"Privy Council" shall mean the Lords and others of Her Majesty's most Honorable the Privy Council, or any two of them:
"Borough" shall mean any place for the time being subject to an Act passed in the session holden in the 5th and 6th years of the reign of King William IV, chapter 76th, intituled "An Act to provide for the Regulation of Municipal Corporations in England and Wales:"
"County" shall not include a county of a city or county of a town, but shall include any riding, division, or parts of a county having a separate commission of the peace:
The Liberty of St. Alban's, and the Liberty of the Isle of Ely, and the Soke of Peterborough, shall respectively be deemed to be separate counties, but all other liberties and franchises of counties shall be considered as forming part of the county by which they are surrounded, or if partly surrounded by two or more counties, then as forming part of the county with which they have the longest common boundary:
"The Metropolis" shall include all parishes and places in which the Metropolitan Board of Works have power to levy a main drainage rate, exclusive of the City of London and the Liberties thereof.

Every place that is not, according to the foregoing definitions, a borough, a county, or a part of the metropolis, or is not separately mentioned in the first schedule hereunto annexed, shall be deemed to form part of the county, as hereinbefore defined, to the county rate of which it is assessed, or, if not so assessed, of the county within which it is situate.

LOCAL AUTHORITY.

4. For the purposes of this order, "district," "local authority," "local rate," and "clerk of local authority," shall respectively mean the places, bodies of persons, rate, and officer in the first schedule hereto annexed in that behalf mentioned.

5. Any local authority may from time to time form one or more committee or committees consisting wholly of its own members, or partly of its own members and partly of such other persons, being rated occupiers in the district, and qualified in such other manner as the local authority may determine, and may delegate, with or without conditions or restrictions, to any committee so formed, all or any powers conferred on the local authority by this order, and may from time to time revoke, add to, or alter any powers so given to a committee.

A committee may elect a chairman of its meetings. If no chairman is elected, or if the chairman elected is not present at the time appointed for holding a meeting, the members present shall choose one of their number to be chairman of such meeting. A committee may meet and adjourn as it thinks proper. The quorum of a committee shall consist of such number of members as may be prescribed by the local authority that appointed it, or, if no number be prescribed, of three members. Every question at a meeting shall be determined by a majority of votes of the members present, and voting on that question; and in case of an

equal division of votes the chairman shall have a second or casting vote.

The proceedings of a committee shall not be invalidated by any vacancy or vacancies amongst its members, or, in case of a committee appointed by the general or quarter sessions of a county, by the termination of the sessions by which it was appointed.

A local authority may from time to time add to or diminish the number of the members, or otherwise alter the constitution of any committee formed by it under this Order, and may dissolve any such committee.

Any committee formed under the provisions of the Cattle Diseases Prevention Act, 1866, shall be deemed to be a committee of a local authority for the purposes of this Order, within the district of such local authority as defined by this Order.

6. The local authority of any borough which is assessed to the county rate of any county may, with the consent of the local authority of such county, such consent being testified in writing by a letter signed by the clerk of such last-mentioned authority, declare, by notice published in any newspaper circulating within such county, that such borough is annexed to such county for the purposes of this Order, and from the date of the publication of such notice such borough shall, for the purposes of this Order, form part of the district of the local authority of such county.

7. Every local authority shall perform all such duties as are imposed upon it by this Order, and shall make such reports to the Privy Council as the Council may from time to time require.

APPOINTMENT OF OFFICERS, ETC.

8. Every local authority shall from time to time appoint such inspectors or other officers as it thinks necessary to carry into effect the provisions of this Order within its district; it shall assign them such duties and award them such salaries and allowances as it thinks expedient, and may revoke any appointment so made.

9. Every inspector or other officer appointed by a local authority previously to the date of this Order, for any purpose relating to the cattle plague, and holding office at such date, shall be deemed an inspector or officer for the purposes of this Order within the district of such local authority as defined by this Order, and be subject to the provisions thereof, in the same manner as if he had been appointed thereunder.

10. Every inspector shall furnish the Privy Council with such information in regard to the cattle plague as they may from time to time require.

11. Every local authority may provide and supply, without charge, printed copies of any documents or forms requisite for the purposes of this Order.

12. All expenses incurred by a local authority in carrying into effect this Order shall be defrayed out of the local rate.

13. Any person appointed or to be appointed by the Privy Council an inspector for the purposes of this Order shall, throughout the whole of England, have all the powers which an inspector appointed by a local authority has within his district, and any direction of the Privy Council shall, as respects such inspector, be of the same validity as a direction of a local authority in the case of an inspector appointed by it.

Part II.

DISEASED ANIMALS.

14. Every person having in his possession or under his charge any dis-

eased animal shall forthwith give notice thereof to such officer as may have been appointed by the local authority of the district to receive such notices; or, if no such officer has been appointed, to a police constable, whose duty it shall be to report without delay to the local authority the fact of such notice having been given to him. Any person failing to comply with this regulation, as to giving notice, shall be deemed guilty of an offence against this Order.

15. Every person having in his possession or under his charge any diseased animal shall, as far as practicable, keep such animal separate from animals not diseased. Any person failing to comply with this Regulation shall be deemed guilty of an offence against this Order.

16. No diseased animal, and no animal which has, within the preceding twenty-eight days, been in the same shed or stable, or in the same herd or flock, or in contact with a diseased animal, shall be removed alive from the premises where such animal may be, except with a license from the local authority of the district, which license shall only permit the removal of such animal to some place within the district of such local authority where it can be conveniently slaughtered, or kept apart from all other animals until such local authority is satisfied that there is no reasonable probability of such animal propagating disease; provided that no such license shall authorise such animal to be removed in contravention of the seventeenth Regulation of this Order.

If any animal is removed in contravention of this Regulation, the person causing, directing, or permitting the removal of such animal, and also the person removing the same, shall respectively be deemed guilty of an offence against this Order.

17. No diseased animal, and no animal that has within the preceding twenty-eight days been in the same shed or stable, or in the same herd or flock, or in contact with a diseased animal, shall—

1. Be placed or kept in any common or unenclosed land, or in any field or other place insufficiently fenced:
2. Be sent or brought to any fair or market, or exposed for public sale:
3. Be driven along or allowed to stray upon any highway or the sides thereof:
4. Be sent or carried by any railway, canal, river, or other inland navigation, or by any coasting or sea-going vessel.

If any animal is dealt with in contravention of this regulation, the owner of such animal and also the company or person other than the owner dealing with the same in contravention of this Regulation, shall be deemed guilty of an offence against this Order.

18. Where any offence is committed with respect to any animal under the 14th, 15th, 16th, and 17th Regulations of this Order, or any of them, the local authority of the district, and any authority of a fair or market in which such animal may be, may by themselves or their officers cause such animal to be slaughtered and buried, and recover from the owner, in a summary manner, all expenses so incurred.

19. All diseased animals, whether they have been slaughtered or have died of the disease, shall be buried by the owner as soon as practicable, in some proper place, with their skins slashed in such a manner as to prevent their being made of any use, and with a sufficient quantity of quicklime or other disinfectant, and shall be covered with at least five feet of earth, or shall be otherwise disposed of in such manner as may be directed by any Regulations made by the local authority, and approved by the Privy Council.

If any diseased animal is not buried or otherwise disposed of in pursuance of this Regulation, the owner of such diseased animal shall be

deemed guilty of an offence against this Order, and it shall be lawful for the local authority to bury or otherwise dispose of any such animal, and to use any convenient place on the premises of the owner for that purpose.

The local authority may recover from the owner in a summary manner any expenses incurred by it under this Regulation.

20. No person shall dig up any diseased animal, or part of a diseased animal. Any person acting in contravention of this Regulation shall be deemed guilty of an offence against this Order.

21. Every local authority shall within its district, at its own expense, cause the premises in which diseased animals have been to be thoroughly cleansed and disinfected; and the occupier of such premises shall give all facilities for such cleansing and disinfecting. Any occupier of premises failing to give such facilities shall be deemed guilty of an offence against this Order.

22. No fresh animal shall be admitted into any yard, shed, stable, field, or other premises in which a diseased animal has been kept while affected by disease, or has died, or been slaughtered, until the expiration of thirty days after the cleansing and disinfecting of such premises. If any fresh animal is admitted into any yard, shed, stable, field, or other premises in contravention of this Regulation, the occupier of such yard, shed, stable, field, or other premises, shall be deemed guilty of an offence against this Order.

23. The dung of a diseased animal, and all hay, straw, or litter, or any other article that has been in contact with or used about a diseased animal, shall be destroyed, or, with the sanction of the local authority, shall be disinfected and dealt with to the satisfaction of the inspector. If such dung, hay, straw, litter, or any other article is not destroyed or disinfected and dealt with in pursuance of this Regulation, the local authority may cause the same to be destroyed or disinfected, and recover in a summary manner all expenses incurred by it from the occupier of the premises on which such articles were found, and in addition thereto such occupier shall be deemed guilty of an offence against this Order.

24. The dung of a diseased animal, and all hay, straw, or litter, or any other article that has been in contact with or used about a deceased animal shall not be removed from the premises where such animal has been, except for the purpose of being destroyed or disinfected, and dealt with in compliance with this Order, and with the license of an inspector, specifying the place at which it is to be destroyed or disinfected and dealt with, and shall not be removed beyond the limits of the district of the local authority in which the said premises are situated without the consent in writing of the local authority into whose district it is moved. If such dung, hay, straw, litter, or other article is removed in contravention of this Regulation, the occupier of the premises from which it is removed, and also the person removing the same, shall be respectively deemed guilty of an offence against this Order; and it shall be lawful for the local authority to destroy or disinfect any such article, and to recover the expenses of such destruction or disinfection from the said occupier.

25. Every local authority shall direct the disinfecting of clothes of, and the use of due precautions by, inspectors and other officers brought into contact with diseased animals, with a view to prevent such inspectors or officers spreading contagion. Any inspector or officer disobeying the directions of any local authority as to such disinfection and use of due precautions shall be deemed guilty of an offence against this Order.

INFECTED PLACES.

26. The authorities hereinafter mentioned, that is to say, any local authority as to any place within its district, shall, and the Privy Council as to any place in England may, by Order made at any time after the passing of this Order, and published in manner hereinafter mentioned, declare any place in which disease amongst animals at that time exists, together with such an area, including such place, as to such authority may seem to be required, to be an "infected place," from and after a date to be specified in such order; and the authority declaring a place to be infected may, at the expiration of one month after the disappearance of disease in that place, by order published in like manner, declare such place to be free from disease, and after the publication of such last-mentioned Order such place shall cease to be an "infected place" within the meaning of this Order, unless again declared in manner aforesaid to be "an infected place."

Any local authority may include in the area of an "infected place" any adjoining part of the district of another local authority, with the consent of such last-mentioned authority, testified in writing by a letter signed by the clerk of such authority.

The area of an "infected place" may be described by reference to a map deposited at some specified place, or by reference to parishes, townships, farms, or otherwise, as the authority may think expedient.

An order declaring a place to be an "infected place" shall be published by notice being posted up in or near the "infected place," and, so far as is possible, in all places where notices are usually posted up, within five miles of such "infected place," or in such other manner as the authority declaring the place to be infected may think expedient.

The local authority, on declaring any place infected, shall forthwith report by post to the Privy Council the fact of such declaration having been made.

No objection shall be taken in any legal proceeding in respect of an "infected place" on the ground that due notice has not been given of such place having been declared to be an "infected place."

Any order made by the Privy Council under this regulation shall supersede any Order inconsistent with it that may have been made by a local authority.

27. The following rules shall be observed with respect to "infected places," in addition to the other Regulations of this Order with respect to diseased animals; that is to say:

1. No animal shall be moved out of an "infected place."
2. No hides, skins, horns, hoofs, or offal of animals shall be moved out of an "infected place" without the license of some officer of the local authority appointed to issue such licenses certifying that such articles have not formed part of a diseased animal, and, if necessary, have been properly disinfected:
3. No carcase of, or undressed meat that has formed part of, any bull, bullock, cow, ox, heifer, or calf, shall be moved out of an "infected place" without the license of some officer of the local authority appointed to issue such licenses, certifying that such carcase is not that of a diseased animal, or that such meat has not formed part of a diseased animal:
4. No dung of animals, and no hay, straw, litter, or other articles forming the food of animals, or used for or about animals, shall be removed out of an infected place without the license of some officer of the local authority appointed to issue such licenses, cer-

tifying that such articles have not been in contact with or used about a diseased animal:

5. A license for the purpose of this regulation must be in writing, and shall not authorise the removal of any articles beyond the district of the local authority in which the infected place is situate without the license of the local authority into whose district it is proposed to move such articles.

If any animal, dung of animals, hide, skin, horn, hoof, offal, meat, hay, straw, litter, or other articles, is or are moved in contravention of this Regulation, the owner of such animal or articles, and also the person moving the same, or causing, directing, or permitting the same to be moved, shall respectively be deemed guilty of an offence against this Order.

All constables and police officers shall enforce the provisions of this regulation to the utmost of their power, and may apprehend all persons committing any offence against this Regulation, and may require all animals and articles being moved out of such place in contravention of this regulation to be forthwith taken back within the limits of such place.

This regulation shall not apply to any animal or article carried by railway through an infected place.

MARKETS AND FAIRS.

28. No market, fair, auction, exhibition, or sale of cattle shall be held until the 1st day of June, 1866, except as hereinafter mentioned; that is to say:

First. Cattle belonging to the owner or occupier of premises that are not situate within the limits of an infected place, if the cattle are free from disease, and have been in possession of the owner or occupier not less than twenty-eight days immediately previous to the sale, may be sold on the premises.

Secondly. Markets may be held with the license of the Privy Council for the sale of cattle intended for immediate slaughter. Provided that no cattle shall be removed from such market until they have been marked in the manner in which cattle are ordinarily marked for slaughter, according to the custom of such market, or, if there is no such custom, by clipping the hair off the end of the tail; and all cattle required to be marked by this Regulation shall be slaughtered within four days from the date of holding such market (if sold) by or by order of the purchaser, or (if not sold) by or by the order of the owner, and shall in no instance be taken, in the case of cattle brought to the Metropolitan Cattle Market, beyond the limits of the metropolis, including the City of London and the liberties thereof, and in the case of cattle brought to any other market beyond such limits as may be described in the license of the Privy Council allowing such market, and under such conditions with respect to their movement within such limits as may be imposed by such license.

If any cattle are sold in contravention of this Regulation, both the seller and the purchaser of such cattle shall be deemed guilty of an offence against this Order.

If any cattle required to be marked by this Regulation are not so marked, the persons for the time being in charge of such cattle shall be deemed guilty of an offence against this Order.

If any cattle required to be slaughtered by this regulation are not so slaughtered, the purchaser or owner of such cattle or his agent (as the case may be) shall be deemed guilty of an offence against this Order.

If any cattle are removed in contravention of this Regulation, the person removing such cattle, and the person causing, directing, or permitting the removal of such cattle, shall respectively be deemed guilty of an offence against this Order.

29. No sheep, lambs, goats, or swine shall be brought into or exposed for sale in any market licensed for the sale of cattle under the last preceding regulation, except for the purpose of immediate slaughter, and all such sheep, lambs, goats, and swine, when brought into or exposed for sale in any such market, shall be subject to the last preceding Regulation, in the same manner as if they were cattle, except that they shall be marked in such manner as the market authority may direct, instead of in the manner prescribed by the said Regulation.

FOREIGN CATTLE.

30. Until the 1st of June, 1866, all cattle brought by sea from any place out of the United Kingdom into any town or place in England shall be marked by clipping the hair off the end of the tail, and no such cattle shall be removed alive from such town or place except by sea.

"Town or place" in this regulation shall, according to circumstances, mean as follows:

1. The area of the metropolis, including the City of London and the liberties thereof.
2. The area of any borough or such other limits as may be defined by the Privy Council in respect of such borough.
3. In the case of any other town or place, such area as may be defined by the Privy Council to constitute such town or place.

CATTLE BROUGHT BY SEA FROM ANY PART OF THE UNITED KINGDOM INTO ENGLAND.

31. No cattle brought by sea from any place in the United Kingdom into any town or place in England shall be removed from such town or place alive, without a certificate from the local authority having jurisdiction in such town or place that such cattle have been examined by some officer appointed for that purpose by such authority, and that such cattle are free from disease; but such certificate shall not exempt such cattle from any other Regulation of this Order with respect to the movement of cattle or otherwise; provided, nevertheless, that, in the case of cattle landed in any place in England from Ireland, the certificate of the local authority, that such cattle are free from disease, shall be accepted, in the case of a fat-stock license, by the person authorised to grant the same as sufficient for the purpose of granting such license, and, in the case of a store-stock license, such certificate shall be accepted by the justice as equivalent to the declaration of the owner or his agent, and to the certificate of the occupiers required by the form of the said store-stock license.

"Town or place" shall in this Regulation have the same meaning as in the preceding Regulation.

SPECIAL REGULATIONS WITHIN THE METROPOLIS.

32. The following Regulations shall be in force as respects the movement of cattle within the metropolis, inclusive of the City of London and the liberties thereof:

1. No cattle shall be removed from the metropolis, inclusive as aforesaid; provided that where any person occupies a farm situate partly within and partly without the metropolis, inclusive as aforesaid, or any other contiguous premises so situate, he may, with a license from the commissioner of police of the metropolis (which

license such commissioner is hereby empowered from time to time to grant, and, if he think fit, to revoke), and for a time not exceeding seven days from the date of such license, move from one part of such premises to another any animal not diseased which has been in his own possession for twenty-eight days immediately previous to the date of such license, and has been marked in such manner as the said commissioner of police may direct.

If any cattle are removed from the metropolis, inclusive as aforesaid, in contravention of this Regulation, the owner of such cattle, and also the person in charge of the same, shall respectively be deemed guilty of an offence against this Order.

2. No cattle shall be moved along any highway, thoroughfare, or public place within the metropolis, inclusive as aforesaid, except for a distance not exceeding five hundred yards from part to part of the same farm, or to water, without a license from the said commissioner of police; and every such license shall state the number and description of animals licensed to be removed, and the place of their destination, and shall be valid only for twenty-four hours from the date thereof, provided that this clause of this Order shall not apply to any animals intended for immediate slaughtering which are sent to or from the said Metropolitan Cattle Market.

If any cattle are moved along any highway, thoroughfare, or public place, in contravention of this Regulation, the owner of such cattle, and also the person in charge of the same, shall respectively be deemed guilty of an offence against this Order.

General Regulations.

MOVEMENT OF CATTLE.

33. No cattle shall be moved on any highway between sunset and sunrise, except within the limits of the metropolis, inclusive of the City of London and the liberties thereof, or of any other city or town.

No cattle shall be moved by or upon any railway, canal, navigation, river, or highway, or by any vessel coastwise, without a license, except for a distance not exceeding five hundred yards from one part of the same farm to the other.

Licenses shall be of two descriptions—

1. A license for cattle intended for immediate slaughter, hereinafter called a fat-stock license:
2. A license for other cattle, hereinafter called a store-stock license.

A fat-stock license shall be in the form, and contain the particulars, and be signed in the manner appearing in form marked A in the second schedule annexed hereto, or as near thereto as circumstances admit.

A store-stock license shall be in the form, and contain the particulars, and be signed inthe manner appearing in the form marked B in the said second schedule, or as near thereto as circumstances admit.

No cattle shall be moved as aforesaid out of the district of the local authority in which they are, without a license in one of the forms aforesaid, such form being applicable to the class of cattle moved; but where cattle are moved only within the district of a local authority, that local authority may make Regulations for granting licenses in such form as it thinks fit for the movement of such cattle, so that the conditions of such licenses be not more stringent than the conditions of the licenses in the said second schedule.

If any cattle are moved in contravention of this Regulation, the owner of such cattle, and the person directing or permitting the removal of the

same, and the company or person conveying the same, shall respectively be deemed guilty of an offence against this Order.

Cattle brought by land from Scotland into England may be moved in England with the same licenses that in Scotland authorise their removal from the district of one local authority to another, in pursuance of any Order of the Privy Council in force for the time being.

34. No person shall drive or allow any cattle under his charge to be driven or to stray into any enclosed field, without the consent of the owner or occupier thereof; and any person acting in contravention of this Regulation shall be deemed guilty of an offence against this Order.

MOVEMENT OF HIDES AND SKINS, ETC.

35. No hide, skin, horn, or hoof of animals shall be moved by highway, railway, canal, river, or other mode of conveyance unless effectually covered.

If any hides, skins, horns, or hoofs are moved in contravention of this Regulation, the person sending the same, and the person moving the same, shall be deemed guilty of an offence against this Order.

36. No Regulation of this Order shall apply to the following hides, skins, horns, and hoofs (that is to say):

(1.) Hides, skins, horns, or hoofs, imported into the United Kingdom from India, Australia, South Africa, or America.

(2.) Hides, skins, horns, hoofs, or glue pieces that have been effectually limed for manufacturing purposes.

But the burden of proving that any hides, skins, horns, or hoofs, are such as are authorised by this Regulation to be removed shall lie upon the person charged with moving the same in contravention of this Order.

REGULATIONS AS TO DOGS.

37. A local authority may make such orders as it thinks expedient for preventing the propagation of disease by means of dogs, and may order any stray dogs to be destroyed, or otherwise disposed of as it thinks fit.

CLEANSING OF PENS AND TRUCKS.

38. Every railway or other company or person carrying animals for hire shall, on every occasion after any animal has been taken out of any pen, carriage, truck, or boat, used by such company or person, and before any other animal or article is placed therein, thoroughly cleanse and disinfect every such pen, carriage, truck, or boat, in such manner as the Board of Trade may from time to time direct.

The expression "truck" shall include any horsebox or other vehicle used in the carrying of animals.

If any pen, carriage, truck, or boat, is at any time used in contravention of this Regulation, the company or person by whom it is used shall, every time that such pen, truck, or boat is used, be liable to a penalty not exceeding £5.

POWERS OF OFFICERS EMPLOYED UNDER THIS ORDER.

39. Any inspector or other officer empowered to carry this Order into effect may, if authorised so to do by any general or special Order in writing of the local authority, enter any field, stable, cowshed, or other premises within his district, where he has reasonable grounds of supposing that cattle affected by disease are to be found, or have been buried, or otherwise disposed of, for the purpose of carrying into effect the provisions of this order, or enter into the station or premises of any railway or other company or persons carrying animals for hire, for the purpose of ascertaining whether the pens, carriages, trucks, boats, or

other vehicles used by such company or person have been duly cleansed and disinfected; and if any person refuses admission to, or obstructs or impedes, or aids in obstructing or impeding, any such inspector or other officer, he shall be deemed guilty of an offence against this Order.

40. It shall be lawful for any officer authorised by a local authority so to do, or for any constable or police officer, to inspect any railway truck, cart, boat, or other vehicle by land or by water, in which animals, hay, manure, litter, straw, and other articles, used for or about animals, are carried, and to examine the person in charge of the same, with a view to ascertain whether any animals or articles are being moved in contravention of this order; and such officer may, if he has reasonable grounds for suspecting that such animals or articles are being moved in contravention of this Order, apprehend without warrant the person in charge of the same, and bring him before a justice, who shall inquire into the case in a summary manner, and such justice, if satisfied that there are good grounds for suspecting that such animals or articles were moved in contravention of this Order, may direct, by writing under his hand, such animals or articles to be detained, and the person in charge thereof to be brought before two justices as soon as practicable, and such animals or articles may be detained, and the person brought before the justices accordingly.

Upon such person being brought before the two justices they shall adjudicate on the case in a summary manner, and, if satisfied that the animals or articles were moved in contravention of this Order, may direct the same to be destroyed or otherwise disposed of, as they think most expedient, for the prevention of the spreading of disease amongst animals.

The constable or other police officer detaining any animals in pursuance of this Regulation shall cause them to be supplied with requisite food and water during their detention; and any expenses incurred by such officer in respect of such animals may be recovered in a summary manner from the person in charge, or from the owner of the animals.

41. It shall be lawful for any constable or police officer, or for any officer authorised by a local authority so to do, to stop and detain any animal moved, or which he has reasonable grounds for suspecting is being moved, in contravention of this Order, and to apprehend without warrant the person in charge of such animal, and bring him before a justice, who shall inquire into the case in a summary manner; and such justice, if satisfied that such animal was being moved in contravention of this Order, may direct, by writing under his hand, the animal so moved to be detained, and the person in charge thereof to be brought before two justices as soon as practicable, and such animal may be detained, and person brought before the justices accordingly.

Upon such person being brought before the two justices they shall adjudicate on the case in a summary manner, and, if satisfied that the animal was being moved in contravention of this Order, may direct the same to be slaughtered and buried, or to be otherwise disposed of, as they think most expedient for the prevention of the spreading of disease amongst animals.

Any constable, police, or other officer detaining any animal shall cause it to be supplied with requisite food and water during its detention; and any expenses incurred by such officer in respect of any animal may be recovered in a summary manner from the person in charge, or from the owner of the animal.

42. If any person having charge of any animal or thing being moved on a highway, railway, canal, navigation, or river, for the moving

whereof a license is requisite under this Order, being required by any constable, police officer, or officer authorised by a local authority, to produce the license (if any) for the moving of that animal or thing, fails so to do, he shall be deemed guilty of an offence against this Order.

43. Every person guilty of an offence against this Order shall for each such offence incur a penalty not exceeding £20; and where any such offence is committed with respect to more than four animals a penalty not exceeding £5 for each animal may be imposed instead of the penalty of £20. And where any such offence is committed with reference to any dung, offal, hay, litter, straw, or other thing, a further penalty not exceeding £10 may be imposed for every half ton in weight of such dung or other thing after the first half ton.

44. Any local authority may appear before any justices, or in any legal proceedings, by its clerk, or by any agent authorised by it in writing under the hands of two of its members, and any railway company or other body corporate may appear before any justices, or in any legal proceedings by their secretary, or by any member of their board of management, or by any agent authorised in writing under the hands of any two members of such board.

Part III.

REPEAL OF ORDERS.

45. On and after the 16th April, 1866, there shall be revoked, so far as respects England and Wales, the following Orders, or so much thereof as may be in force; that is to say:

The Orders of July 24th, 1865; November 23rd, 1865; December 16th, 1865; January 20th 1866; February 6th, 1866; February 23rd, 1866.

And all notices published by any local authority, in pursuance of such Orders, shall cease to have any effect, without prejudice, nevertheless, to the prosecution of any offence that may have been committed against the said Orders or notices, or any of them, or to the recovery of any penalty in respect of such offence.

ARTHUR HELPS.

THE FIRST SCHEDULE.

Districts of Local Authority.	Description of Local Authority of District set opposite its Name.	Local Rate.	Clerk of Local Authority.
Counties except the Metropolis	The Justices in General of Quarter Sessions assembled	The County Rate, or rate in the nature of a County Rate	Clerk of the Peace.
The Metropolis	The Metropolitan Board of Works	Rate or fund applicable to the payment of the general expenses of the Board	The Clerk of the Metropolitan Board of Works.
City of London and the Liberties thereof	The Court of the Lord Mayor and Aldermen	Consolidated Sewers Rate	Town Clerk.
Boroughs . .	The Mayor, Aldermen, and Burgesses attending by the Council.	The Borough Fund, or Borough Rate	Town Clerk.
District of Local Board of Oxford	The Local Board	Rate leviable by the Local Board	Clerk of the Local Board.

THE SECOND SCHEDULE.

A.

FAT-STOCK LICENCE.

I, A. B., of* hereby license the removal of the undermentioned fat cattle marked with the letter X†, from the premises of , of , in the county of to‡ at , in the county of , such cattle to proceed as follows: § And I grant this licence after satisfying myself that the said premises are not within an infected place, and that no case of cattle plague has existed on the said premises, or within one mile of the outward boundary of such premises, within twenty-eight days immediately preceding the date of this licence; and that the said animals have been on the said premises for the said period of twenty-eight days.‖ The licence shall be in force for ¶ days, and no longer.

Dated, &c.

DESCRIPTION OF CATTLE.

Number of Cattle.	Breed.'	Age.	Bull, Cow, Ox, or Calf.

(Signed) "_____"

B.

STORE-STOCK LICENCE.

I, , of , in the county of , one of Her Majesty's justices of the peace, having jurisdiction in the place from which it is proposed to move the undermentioned animals, having satisfied myself of the correctness of the declaration annexed hereto, hereby license the person undermentioned to move the said cattle by the undermentioned route, provided that the said cattle shall not be driven through any "infected place," or within one mile of the outward boundary of such place.

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* This licence may be granted by the local authority of the place from which the cattle are removed, or any person appointed by such local authority to grant such licence.

† The cattle must be marked with the letter X on the hind quarter.

‡ Here insert licensed market or place of slaughter, &c.

§ Describe route. The highway, if the animals proceed by highway, must not pass through, or within a mile of, the outward boundary, of any "infected place."

‖ In the case of cattle landed in any place in England from Ireland, the certificate of the local authority, that such cattle are free from disease, shall be aceepted by the person authorised to grant this licence as sufficient for the purpose of granting such licence.

¶ Not to exceed three days.

Number and Description of Animals.	Name and Address of Seller or Owner.	Route to be taken.	Name and Address of the Buyer, Owner, or Person to whose Premises the Animal is to be sent for Breeding Purposes.	Name of Drover, &c.

This licence shall be available for six days, and no longer.

C.

DECLARATION OF OWNER OR HIS AGENT.*

(To be annexed to foregoing Declaration.)

I, A.B., of , in the county of , do hereby declare that the cattle marked , (which I have sold)† to are free from cattle plague, and that no case of cattle plague has, within two months immediately preceding my making this declaration, existed upon the premises from which I desire to move such cattle, or within two miles of the outward boundary of such premises. And I further declare that the said cattle have all of them been on the said premises for twenty-eight days immediately preceding my making this declaration, and have not during that time been in contact with any newly-purchased animals.

Dated this day of

(Signed by Declarant).

CERTIFICATE TO ACCOMPANY DECLARATION.

We, the undersigned, being each of us occupiers of upwards of 100 acres of land, and living within a distance of ‡ miles of the premises of A.B., have viewed the cattle described in his declaration, and to the best of our knowledge certify them to be free from cattle plague; and we believe that the statements contained in the declaration of the said A. B. are correct.

Dated

I. J. of O.
K. L. of P.

* This declaration must be made by the owner, or his agent, in the presence of the justice. In the case of cattle landed in any place in England from Ireland the certificate of the local authority to the effect that the cattle are free from disease shall be accepted by the justice as equivalent to the declaration of the owner or his agent and the certificate of the two occupiers.

† If the cattle are being moved on change of tenancy or on change of pasture, or from premises in one place to premises in another, in the occupation of the same person, insert instead of the words [which I have sold] the words [which I desire to move from to].

If the cattle are required to be moved for the purpose of breeding, insert instead of the words [which I have sold] the words [which I desire to send for breeding purposes to].

‡ The occupiers must live within two miles, if possible; if they live more than two miles the justice must satisfy himself that they have reasonable means of knowing the truth of the facts which they certify.

THE SIBERIAN CATTLE PLAGUE; OR, THE TYPHOID FEVER OF THE OX.

By William Budd, M.D., Clifton.

(*Concluded from* p. 299.)

We have already seen that this fever of the ox is a perfect type of all the other contagious fevers, human as well as epizootic. From this it inevitably follows, as I pointed out at first, that the same law of propagation must apply to this also. The very characteristics which unite them all into one family group constitute, in fact, the most telling part of the evidence on which the law here referred to is based. And herein, if I mistake not, we shall find the chief answer to the question which Dr. Tindal Robertson has brought before us—the question, namely, why sanitary measures are not always followed by a reduction of mortality. It is because in these measures, as hitherto conceived and executed, this law has until lately been almost wholly ignored. While it is to the living body that we must look as the exclusive source of the morbific agents against whose attack sanitary works were first principally instituted, the sanitarian for a long time sought their source, not in the living body at all, but in conditions altogether external to it. Practically, under this *regime*, sanitary improvement simply meant improved drainage and pure drinking-water. I need not say that I have no desire to underrate the importance of these two cardinal things. On the contrary, no one can think more highly of them than I do. As conditions of health, they are primary and fundamental. They admit neither of equivalent nor substitute. One result they have of a more special kind. As typhoid fever, Asiatic cholera, and some other very fatal diseases, are propagated by specific germs which are cast into drains and often soak into drinking-water, improved drainage, and drinking water secure against this sort of contamination, are among the best safeguards against these scourges. But, if we wish to make sure of preventing their spread, clearly the most direct and effectual way is to destroy these germs immediately on their issue from the body. Under the present conditions of human life in this and other countries, this is our only certain security.

Holding these views, it was no common gratification to me to find that the plan for preventing the spread of typhoid fever and Asiatic cholera by destroying the infectious pro-

perties of their characteristic discharges—a plan which I was the first to propose so many years ago—had been incorporated into the excellent code for the prevention of these diseases which was issued by the Privy Council in 1859, and has lately again been made public.

If the views put forward in this essay be in conformity with nature, the same principle—the principle of destroying, or in other ways rendering of none effect, the specific germs they breed and cast off, each in its mode—must be applied to all the other contagions also. Until this be done, as I have often said before, and can never weary in repeating, we shall make small way in the great work of prevention. When it is universally done, and when general sanitary improvement goes hand in hand with it, our preventive armour will be complete. And I will venture to prophesy that, whenever this great consummation is reached, we shall no longer have reason to discuss the question why sanitary measures are not always followed by a reduction of mortality.

But if the conclusions drawn from the study of the typhoid fever of the ox apply to contagious fevers generally, I need scarcely say that they apply with peculiar emphasis, and in still more specific detail, to the typhoid fever of man. Each having a period of incubation; each being a contagious fever; each destroying the living organism by multiplying within it; each occurring, as a rule, but once in life; each, as far as present evidence goes, confined to the species it is known to infest; each characterised by an internal eruption, not only the exact pathological equivalent the one of the other, but so nearly like as to admit of being confounded by distinguished anatomists—the law of the one fever is clearly, and beyond the possibility of doubt, the law of the other. For these points which the two diseases have in common are not superficial things, but points which touch and grow out of their very essence. To be able to say all this of these two fevers, is to say, in other words, that the specific agents which are their material cause, are things of the same nature, having the same law of specific origin, growth, and evolution, with all the same specific limitations.

Some years ago, in a series of papers published in the *Lancet* and in the *British Medical Journal*, I endeavoured to show that the follicular disease of human typhoid fever is the pathological counterpart of the eruption of smallpox. In the typhoid fever of the ox this doctrine receives, in the inoculability of the morbid product, absolute demonstration. In the same series of papers, I showed that the popular

notion, that typhoid fever springs up spontaneously, has no scientific foundation. In the case before us this notion is not only proved to be untenable, but to be wanting in even a plausible pretext to sustain it. I further showed, on the same occasion, that the common idea, that human typhoid fever is caused by the putrescence of healthy fæces, is founded on a limited and false induction. In the case of the bovine analogue such an idea is seen at once to be nothing less than preposterous.

And here I draw this already too long essay to a close. Although originally written with an eye to human disease only, the course of events has given it a twofold interest. Intended to illustrate the mode of propagation and prevention of the typhoid fever of man, it may be employed in the same degree to illustrate that of the typhoid fever of the ox. Of the two, the latter is likely for the moment most to absorb the public mind. Seeing the magnitude of the interests at stake in the great calamity by which we are threatened, this is not to be wondered at.

It would task a powerful intellect to comprehend at a single glance all their variety and importance. Born and brought up in the country, and having conceived in early life a deep love for farming—that living partnership with nature, in which man and nature work so mysteriously together for the better endowment of life, and "the relief of man's estate," I cannot venture to hope that you will share all my sentiments on the subject. And, indeed, I feel that I am quite taking you into my inner confidence when I say that my chief delight in journeying hither was to watch the numerous herds of cattle which, grazing peacefully in the green meadows, or lying in the sun, chewing the cud, were the very image of placid animal enjoyment. Beautiful pictures, at once the pride and vindication of the English farmer, and far more lovely than any which ever came from the brush of Cuyp or Paul Potter, Ansdell or Cooper, were the laborious ox, strong in the plough, a great helpmate to us; the heifer, with udder rich in milk, butter, and cheese, the gentle foster-mother of the English child. But it is not in a rapid journey by rail that it is possible to form an estimate of the amount and variety of our national wealth in this noble race of animals.

Those who are doomed to live in towns may obtain some notions of it by looking over the *English Herd-Book*, the 'Burke's Peerage' of horned cattle. The long pedigrees, illustrated by portraits of prize oxen, after the manner of 'Lodge's Portraits of Illustrious Persons,' will give some

idea of the care and expense, and profound sagacity invested in the production of these fine creatures.

For myself, I never can forget the impression made on my own mind, some twenty years ago, when the Royal Agricultural Society met at Bristol, on seeing a long procession of stately short-horns pass in single file into the show-yard; the aristocracy of bullocks: types of ideal perfection, conceived more than a thousand years ago in the fancy of the sculptor and the poet, but now first seen in the flesh: bulls fit to personate Jupiter, and bear away Europa captive; milk-white heifers, in whose lustrous, placid eye, and lovely form and mien, Io might seem to live once more. And although this may be thought to be too Arcardian a view for so prosaic and severe a thing as a scientific essay, I am sure it is a view which Colonel Townley, one of the greatest of modern artists in modelling this beautiful living clay, will entirely appreciate, should this deadly pest attack his herd. But even if we descend from these Parnassian heights to the level of the market, we find ourselves still on touching ground.

For although the matter here be ostensibly one of mere buying and selling, it strikes, in the act, the tender chord of human want and human suffering. Beef, butter, and cheese at famine price; the arm of the English workman robbed of one of its main sources of strength; the English child languishing for want of its accustomed milk. And this, be it remembered, is not a picture drawn merely from the imagination, but one that was seen in all its bitter reality in a thousand homes when the plague was last here.

I confess that feelings of no common bitterness come over me when I think of the havoc that may possibly be made of all these great things by an agent which is not only so low in the scale of being that the toadstool may be said to rank high in comparison, but whose advent to our shores might have been altogether prevented by precautions which science could have suggested.

But these, as I have said before, were not the objects with which I undertook to write this little essay. What first induced me to bring the subject of cattle plague under your notice was the brilliant light which the demonstrable laws of this disease throw on the laws which govern the analogous diseases of our own species. Viewed in this relation, this fever of the Siberian ox acquires an interest which, without exaggeration, may be said to be august. If physicians will only take the pains to draw from its history, and will lay to heart, all the deep lessons it is capable of teaching, these

poor Siberian cattle will not have perished in vain, but, out of their bones which whiten the steppe yonder, weapons of defence may be fashioned which, in future time, will often guard our own homes from the fatal stroke of many an invisible power, whose attack no other weapons will suffice to avert.

THE CAUSES OF HIGH-PRICED MEAT.

A LECTURE on the causes of high-priced meat was delivered in the Agricultural Hall, Saffron Walden, on Tuesday, April 10th, by Mr. I. Seaman, M.R.C.V.S.; J. Clayden, Esq. (Mayor), presided.

The Mayor said:—I have great pleasure in introducing Mr. Seaman, who is well known to us all. The lecturer then commenced as follows:—

Mr. President, ladies, and gentlemen—The high price of meat has become one of the leading questions of the day, and well it might. Does it not involve the interest of every meat-eating individual of our country, directly or indirectly? The high price of meat is a prohibition to its use, by many hundreds of thousands of our countrymen, upon whose muscular development and power of endurance under labour, are depended the carrying forward the machinery of England's greatness. That meat is an absolute necessary for the healthy support of man no one will deny, except a certain class of persons called vegetarians, who consume more animal food in the shape of butter, eggs and cheese than those who eat both kinds of food. Man evidently requires a mixed diet, and in proportion as we find him fed on animal food do we find him develope in moral and physical excellence. I need only direct your attention to the condition of the nations of Europe, and where will you find them the strongest and most able to perform the greatest amount of labour? Why, in beef-and-mutton-eating old England. Statistics are not the only proofs that man is a carnivorous animal as well as an herbivorous one, if we examine him anatomically. Let us take the skull of the lion, horse, and man. We shall find the skull of the lion to represent a class of animals strictly carnivorous; the skull of the horse strictly herbivorous; and the skull of man a compound of both—that is, canine teeth, like those of the lion for cutting and tearing, and flat teeth for grinding, like those of the horse; evidently showing how the great Creator, who has so wonderfully made

us, provided these instruments to enable us to prepare for digesting both vegetable and animal food. The want of a reasonable supply of animal food is not only detrimental to us as individuals morally, physically, and pecuniarily, but it saps at the very life-blood of the nation. The price of beef and mutton, like all other manufactured articles, must be regulated by supply and demand. The demand fairly met, the price is unaltered; increase the supply, and the price must fall in proportion; but the question we have to deal with is the converse of this—our demand is greater than the supply independently of the cattle plague: this truth is becoming every day more and more apparent to those who pooh-poohed my assertions of the fact some years since. During the American war the cotton trade was almost suspended, and what was the result? Both the raw and manufactured article advanced 100 per cent. in price. Iron, one of the greatest resources of our national wealth, of more value to us than all the gold mines of the world put together, has advanced 50 per cent. since its universal application to the arts and manufactures of this and other countries. The cause of high-priced meat is not wholly involved in the supply; there is also a gradual increased demand in proportion to our national prosperity. If we first glance at our mining importance, it almost staggers belief, glancing only at the single county of Cornwall and its 36,000 persons daily employed in its mines, to say nothing of human ant-hills of industry disembowelling the earth of its riches in the West and North of England, Scotland and Wales. The stimulus given to the cotton trade has also its effects, the immensity of our ship building, our gigantic railway works, bridge building, and other architectural improvements, so characteristic of the present age, are daily calling into the most active labour increased numbers of the population upon increased wages, and, naturally enough, an increased demand for meat. The low price of meat is another cause of the demand for meat, with a four pound loaf at 9d., a person with a large family and a scanty income would, after paying for bread, have little left for the purchase of meat. When 4½d. only is paid for the same weight, not so much is required because of the increased consumption of meat. This enables the sober and comfortable living workman, after paying his baker's bill, to purchase something like an adequate supply of meat, that is, when meat is sold at a reasonable price. The additional quantity of meat given away by our Poor Law Board is another source of demand for beef or mutton. Upon the assumption that the same law which regulates the price of any other article is in

operation in relation to meat, it must be admitted that the high price of meat is owing to an insufficient supply to meet an increasing demand, and the cost of the raw material required to produce the meat. To those unaccustomed with farming it may appear that immense profits have been realised by fatting sheep and oxen; at the present prices it would be so, were it profitable to feed and fatten animals on fixed principles, like the production of inanimate substaces under cover and between walls; but there are influences constantly in operation so damaging to the health of cattle and sheep, and other prejudicial circumstances such as blights, mildews, vegetable parasites, destroying the turnip, bean, and pea crops. Excessive dry seasons, accompanied by failures of the various grass crops; excessive wet seasons and impure artificial foods which are so detrimental to the health of cattle with epizootic diseases. Over all these hurtful causes the stock master has no control. Hitherto the greatest obstacle to the production of beef and mutton is a tax of 75 per cent upon an important raw material which the farmer is prohibited to manufacture from the produce of his own farm. The closet philosopher, with a view to the supply of more beef and mutton, recommends more pasture land; but this great genius appears to have overlooked the fact that grass grows only six months in the year, and he has not told us what sheep and cattle are to be fatted upon the six winter months. He has censured the British farmer for not fatting more sheep and oxen; but the farmer has found it impossible to increase the numbers of his ewes and cows in consequence of the impossibility of obtaining suitable food for rearing, and the only available food for this most important purpose the British Parliament prohibits being manufactured. To tell the stock master to rear more lambs and calves without allowing them to manufacture suitable food for them is just as absurd as to tell him he can walk as well on his head as on his heels. During the last four seasons there has been an almost entire failure of the grass crops, and sheep and oxen have had to be fed in winter and summer in many parts of England upon the produce of arable land and unwholesome manufactured stuffs; the arable upland farms, which produce the greatest quantity of beef and mutton, if they were laid down to pasture, would not keep a horse per acre. In August, 1865, when meat was at a price unattained since 1813, and in which year chops and steaks were 1s. 3d. per pound and salt pork 1s. 6d. per pound, workmen in different parts of England struck for wages, and in some cases almost approached to famine mobs. In Worcester they paraded the streets and protested that they would not eat any

more meat until it could be obtained at a cheaper rate; the butcher was said to be monopolising the trade, and was a worse pest than the rinderpest, and many other bad names were applied to him that he did not deserve; and the farmer was said to be involved in the conspiracy. When an animal attains a certain stage of fatness the farmer finds it prudent to sell, to keep it longer incurs certain loss. The animal must eat, and food costs money; it gets fatter, and the public do not like so much fat, and it will not realise so much money in the market. I think we may dispose of the question of conspiracy and monopoly and acquit the butcher of the crime of plundering the people out of their money by charging high prices for meat. The farmer ought to obtain from the butcher a price for his ox proportioned to the outlay in getting it into a fit state for slaughter, and during the last four years the outlay has been very great; the butcher, in his turn, ought to regulate the price of his meat in proportion to the price paid for the animal, receiving besides a common trade profit. Let the farmer be unrestricted in the use of the produce of the farm, and a restriction placed upon the importation of foreign cattle, and in a few years beef and mutton would be lowered to 6d. or 7d. per pound.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

OBSERVATIONS ON A MALADY IN SHEEP AND GOATS ANALOGOUS TO THE RINDERPEST, CAUSED THROUGH INFECTION FROM ANIMALS OF THE BOVINE SPECIES AFFECTED WITH THIS PEST.

By Professor Röll, of the Veterinary Institute, Vienna.

(*Continued from* p. 308.)

Here, also, the whole process of the malady completely agreed with that of the rinderpest. The circumstance that in the small intestines, instead of the fibrous exudations there was found an ichorous fluid which eroded the mucous membrane in contact with it, may be attributed to the animals being in a wretched condition, from the scarcity of fodder, the same appearances having been observed in badly-fed horned cattle, which succumbed from the attacks of the rinderpest. It is remarkable that the same was also found

in those sheep in Carniola, and the same facts were observed in Bohemia, on the *post-mortem* examinations, that is, the exudative inflammation of the lungs in sheep, which, as a rule, are absent in cattle that die of the rinderpest, or at least, are not often met with. The difficulty of the respiration in sheep affected with this malady is to be attributable to the state of the lungs.

The malady amongst the sheep was not so virulent by far as the rinderpest. In the above-named three villages, the total number of sheep attacked was 138, of which 68 recovered, 64 died, and 6 were killed. The recoveries were, consequently, 49·2 per cent. It was still more benign in the goats, of which 90 per cent. recovered. The period of incubation varied from four to six days. This is from observations made in the beginning of the outbreak.

The question might arise, whether this malady, though in sheep analogous to the rinderpest, might not be a specific malady depending on local causes, such as bad fodder and water, &c., coinciding with the prevalence of the rinderpest? In considering this question, the following facts must be borne in mind. In travelling through those places in the districts of Möttling and Cernembl, to the south-eastern point, close to Preloka, on the military frontiers, the country is found to be of an uniform shape, and on each side of the mountains and hills there are deep basin-formed vallies, in which large boulders, or blocks of rock, are projecting; these depressions are covered with large ferns, sometimes as high as a man. Everywhere are seen miserable-looking sheep, with long shaggy wool, pastured on this rank vegetation. Besides this, sources of pure water totally fail, and these animals are obliged to drink the foul stagnant water in the pools. Nowhere, however, except in those places where the rinderpest prevailed, was there any epizootic malady of the kind amongst sheep.

A simple and casual appearance of the sheep disease in question, in those places which were infected by the rinderpest, and at the same time identical both in the symptoms and *post-mortem* appearances, also its causes and further spreading considered, would certainly be one of the greatest wonders.

To remove all doubts in this respect, after my return from Carniola, I propose to institute some experiments by inoculating with the virus taken from the affected sheep. This proposition was accepted by the imperial minister, and Professor Bleiweis was charged with the execution of it; the results of which will be given hereafter.

b. In the district of Senosec the rinderpest broke out in the village of Niederndorf, on the 6th of April, amongst the horned cattle, consequent on an importation from the marine provinces. In the beginning of May, sheep also became affected, and the malady spread gradually to 114 individuals in a flock of 617. Up to the 24th of June, the time when the rinderpest was stamped out, 72 had died, 7 were killed, and 35 recovered. The recoveries, therefore, were only 30·7 per cent.

c. In the district of Feistritz the rinderpest was likewise imported from the same place. In the village of Sagorje, where it broke out on the 29th of April. On the 23rd of May, when only a few herd of horned cattle had fallen a sacrifice to it before it was stopped; a second outbreak followed on the 1st of June, when it was also observed that some sheep became affected, which by careful isolation of the sick from the healthy, the disease was limited to a few. Out of 244, only 57 were attacked, 38 of which died, 1 was killed, and 18 recovered. From the meadow, in which the infected sheep had been kept, the infection spread to the village Vac, in the same district, and broke out amongst the horned cattle.

d. In the grazing country of Garda-draga, district Laas, the analogous disease to the rinderpest showed itself in the month of July, 1863, amongst the sheep imported from South Istria. As these flocks belonged to two proprietors from Sagorje, where the rinder and sheep pest prevailed, it is probable that it was from this place the infection came.

During the prevalence of the rinderpest in the beginning of May to the end of August, 1863, in six places in Carniola, containing 1991 head of sheep, 609 were attacked, of which 241 recovered, 354 died, 14 affected, and 10 suspicious, were killed; thus 306 per cent. of the whole became affected, and 395 per cent. of those attacked recovered.

After the rinderpest was extirpated at the end of October, 1863, in the whole of Carniola, fresh outbreaks took place in seven places on the Croatian frontier, in three districts, namely, Möttling, Neustatl, and Laudstrass. The information received established without a doubt that the malady had been introduced by sheep and goats, among which were still found some affected individuals, which had been, in spite of the quarantine, smuggled by butchers from Croatia into Carniola; and on their transit had been put in the horned cattle sheds. This fact is so far important as it is a fresh proof of the retransmission of the pest of sheep to horned cattle.

The rinderpest, however, remained confined to those places where it broke out, and was extirpated in the middle of December.

III.—*Marine Country.*

In the spring of 1863 the rinderpest was introduced into Pola by some oxen destined to the butcheries, which had been brought by sea from Croatia. It spread from thence through the district of Pola to that of Mitterburg, Dignano, and Pisino, which places had a great intercourse with the town of Pola. In the district of Castelnuova the rinderpest was introduced from Carniola, and spread from thence to the district of Sessana. With the exception of the district of Dignano, an analogous malady to the rinderpest soon broke out amongst sheep, but prevailed exclusively in those places where the rinderpest raged. The fact that the affected sheep communicated the pest to horned cattle was repeatedly demonstrated.

As it respects observations made of this malady in sheep in the marine country (Küsteuland), we have two accurate reports, the first from Department Veterinary Surgeon, Dr. Wutscher, who describes the symptoms, and the *post-mortem* appearances of the sheep which succumbed to this disease in Castelnuova, where the malady had prevailed in two villages, and where the rinderpest also prevailed at the same time.

According to Dr. Wutscher, the malady in the sheep sets in, with great prostration of the vital powers, loss of appetite, and suspension of animation. On the second day the animals could hardly get up; an abundant discharge from the nose set in with husky cough, a thin gruel-like discharge took place from the bowels, which soon became fluid; in virulent cases the thin fæcal evacuations were yellow in colour, and mixed with blood. In very virulent cases death followed in from forty-eight to sixty hours after the attack. In some cases, after the loss of appetite, a few diarrhœaic evacuations took place, and the sheep again became lively and recovered The longest duration of the malady, either terminating in death or recovery, was twelve days.

Where the prostration of the vital forces rapidly increased it soon terminated in death. Where the symptoms were not so violent at first, the animals generally recovered. The convalescent continued to purge for some time, and the discharge from the nose only gradually subsided.

There were cases in which the discharge from the nostrils was but slight during the whole time of the attack, and of a pure mucous character.

At the settling of the bowels, the mucous membrane at the root of tongue and of the windpipe was strongly injected, and mostly covered with a yellow, cream-like substance; in the bronchial tubes either a collection of thick, pus-like fluid, or thin mucus, was found; the lungs were œdematous, and often on their edges there were infiltrations the size of a nut or a pigeon's egg. In the heart, and the large blood-vessels, clots of soft coagulated blood were found.

In the first and second stomachs, in certain places, there were red spots on the mucous membrane; the third stomach contained mostly some wet fodder; the epithelium peeled off easily; the mucous membrane of the fourth stomach, principally towards the pylorus, as well as that of the duodenum, was always hyperæmic, and often striated with extravasated blood; its surface also was covered with a viscous yellow, or brownish mucus; the mucous membrane of the remaining small intestine was usually slightly reddened and swollen; but these alterations were sometimes absent, or only appeared in the rectum. The liver was gorged with blood, and the gall bladder distended with dark or clear bile; its mucous membrane was found mostly swollen; the spleen was normal; the kidneys hyperæmic; the bladder moderately filled.

In sheep, where flukes were found, the malady proved fatal in two or three days.

The second information is from the District Veterinary Surgeon, Dr. Roydoicowitsch, in Rovigno, and is concerning the sheep disease in Pola.

The malady only occurred in one village, named Valdebecco, where the rinderpest broke out on the 10th of August, 1863. On the 25th of the same month a similar malady broke out amongst the sheep. Of 330, which belonged to the proprietors, 34 were attacked, of which 13 recovered, and 5 were killed. The cause of this outbreak was attributed to the sheep being driven into some pasture where infected cattle had been. The infection of those sheep showed itself in far less intensity than the rinderpest which attacked the horned cattle, for in the pasture the malady might have spread to a greater extent. The rams and goats did not suffer, though they were in the same pasture with the sheep.

The course of the malady was divided into three stages by Dr. Roydoicowitsch. In the first, either dulness or excessive liveliness was evinced, consequent on which the sheep jumped up on one another as if they had been rutting. This period lasted one day.

The second stage, which also lasted but one day, was

marked by fever and shivering, great dejection, complete loss of appetite, suspended rumination, followed by costiveness.

To these supervened the third period, which was characterised by a rapid loss of the vital forces; the animals remaining in a recumbent position, with the nose resting on the ground, could not be made to get up. To this symptom must be added a mucus discharge from the nose and mouth, diarrhœa, the evacuations being very abundant and frequent, with tenesmus, followed by blood. The dissection of three or four that had died, and five that were killed, presented the following:—A collection of mucus about the nose and mouth; general emaciation of the body; abdomen distended with gas; the rumen and the reticulum filled with fodder; the omasum hard and distended with dry food which adhered to the leave-like folds of this organ; the epithelium easily detached; the mucous membrane injected; that of the abomasum was much reddened in striæ; ulcers were also present in that viscus; the mucous membrane of the small intestines was much reddened, and there was likewise loss of substance, lengthways, particularly in the duodenum; the glands of Peyer were much swollen; the mucous membrane of the large intestines was in a similar state to that of the small intestines; the liver and spleen were normal, but the gall-bladder was somewhat enlarged. It is to be regretted that the organs of respiration were not noticed in this report.

In the whole of this province, in seven different places belonging to five government districts, of 2244 sheep of which the flocks consisted, 554 were attacked, of which 169 recovered, 332 died, 58 affected, besides one suspicious, were killed; 24·6 per cent. of the whole number were attacked, and 30·5 per cent. of the latter recovered.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL HELD APRIL 4TH, 1866.

PRESENT:—The President, Professors Spooner and Gamgee, Messrs. Broad, J. C. Broad, Ernes, Field, Greaves, Harrison, Hunt, Hunting, Lawson, Moon, Robinson, Rose, Thacker, Wilkinson, Withers, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

The election of a member of the Court of Examiners in

the place of Professor Brande, deceased, was then proceeded with.

It was moved by *Mr. Robinson*, and seconded by *Mr. Field*—

"That Dr. W. A. Miller, of King's College, be elected to fill the vacancy caused by the death of Professor Brande."

On the ballot being taken, Dr. Miller was declared to be unanimously elected.

Letters were read which had been received from gentlemen holding the Highland and Agricultural Society's certificate, who were desirous of presenting themselves for examination.

The Secretary was requested to communicate with them relative to forwarding their certificates in compliance with "Bye-law No. 27."

The subject of the forthcoming examinations was then considered.

It was moved by *Mr. Ernes*, and seconded by *Mr. Harrison*—

"That the examinations take place between April 20th and the 10th of May."—Carried.

The Registrar reported the following deaths—viz., Mr. Joseph Mulliner, of Wrexham, diploma dated June 28th, 1843; Mr. William N. Procter, Bradford, diploma dated April 25th, 1865; Mr. John Cockburn, Haddington, diploma dated April, 1838, and Mr. George Freer, Uppingham, Rutland, diploma dated May 8th, 1844. Also, recently, Mr. Samuel Dudfield, Gloucester, diploma dated July 19th, 1814; Mr. Robert Barr, Irvine, Ayr, diploma dated 1826; Mr. John Purdie, Whishaw, Lanark, diploma dated April, 1833; Mr. Edward Waldie, Jedburgh, Roxburghshire, diploma dated April, 1840; Mr. Henry Hurst, late of Liverpool, diploma dated 1842; and Mr. James Perrie, late of Old Deer, Aberdeenshire, diploma dated April, 1828.

The Finance Committee reported that they had examined the vouchers and receipts of payments during the preceding quarter, which were found to be correct. The Quarterly Balance Sheet of the Treasurer's Account was submitted, from which it appeared that the liabilities for the Quarter ending April 1st, amounted to £60 10*s.* 11*d.*, which the Committee recommended should be discharged.

It was moved by *Mr. Greaves*, and seconded by *Mr. Broad*—

"That the Report be received and adopted."—Carried.

Cheques were ordered to be drawn for the current expenses.

The arrangements for the forthcoming Annual Meeting were next considered.

A letter was then read, which had been received from Mr. W. T. Mayer, of the Royal Engineers, inquiring, "If the Council would advise the insertion of an additional advertisement, along with that of the Annual General Meeting, to consider the policy of proceeding with the Veterinary Medical Bill, and of petitioning Parliament either in reference thereto, or for the appointment of both Houses of the Legislature of a joint Committee, to inquire and report upon the present state and future prospects of the Veterinary profession?"

After a considerable discussion, it was moved by *Mr. Wilkinson,* and seconded by *Mr. Hunting*—

"That after the advertisement of the Annual General Meeting it shall be announced that a discussion will take place upon the subject of the Veterinary Medical Bill, and an application to both Houses of Parliament."

It was then moved as an amendment by *Professor Gamgee,* and seconded by *Mr. Ernes*—

"That the subject stated by Mr. Mayer should be briefly announced in the usual advertisement of the Annual General Meeting, as to be brought forward at the said Meeting.

The amendment having been put from the chair, was lost, and the original motion, carried.

It was then moved by *Mr. Lawson,* and seconded by *Mr. Pritchard*—

"That Professor Gamgee, Messrs. Ernes, Thacker, and the Secretary, be appointed the Committee to prepare the Annual Report."—Carried.

Mr. Clement Lowe and Mr. W. S. Surmon were appointed the auditors.

Professor Spooner's motion for the increase of salary to the Secretary was then considered.

It was moved by *Professor Spooner,* and seconded by *Professor Gamgee*—

"That the Salary of the Secretary to the Royal College of Veterinary Surgeons be increased to £100."—Carried.

Professor Gamgee's motion to inaugurate a system of lectures to be delivered at the Royal College of Veterinary Surgeons was also considered.

It was moved by *Professor Gamgee,* and seconded by *Mr. Ernes*—

"That a course of lectures, as suggested by Professor Varnell, be periodically delivered at the Royal College of Veterinary Surgeons."—Carried.

The Anniversary Dinner was announced to take place at the London Tavern.

The Secretary drew the attention of the Council to the defective state of the portrait of the first President of the Royal College of Veterinary Surgeons, which required re-varnishing. It was ordered to be done, and also a balloting box to be purchased for the use of the College.

By order of the Council,

WILLIAM HENRY COATES,
Secretary.

SPECIAL MEETING OF THE COUNCIL, HELD APRIL 18TH, 1866.

PRESENT:—The President, Professors Spooner and Gamgee, Messrs. J. C. Broad, Ernes, Field, Harpley, Harrison, Moon, Wilkinson, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

Several presentations to the Library were laid upon the table, consisting of fifteen volumes of books received from Mrs. Gabriel, a work on the 'Cattle Plague,' by Professor Gamgee, and three volumes of books by Mr. T. W. Gowing. The latter named gentleman also gave a valuable case of Dental and other instruments to the Museum.

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Harpley*—

"That an especial vote of thanks be given to the Donors who have so liberally contributed to the Library and Museum."—Carried.

A letter was then read from Mr. Holland, expressing a wish to have an interview on the subject of the Veterinary Medical Bill.

The *President* stated that he had waited upon that gentleman, together with the legal adviser and the Secretary, when Mr. Holland informed him that Government was overwhelmed with business, but that he would see Sir George Grey or Mr. Bruce, and ascertain if a Deputation from the Profession would be received at the Home Office for the introduction of the Bill, and he would then communicate further on the subject.

A second letter was afterwards read, to the effect that Mr. Holland could not get the Bill taken up by Government, but he expressed his willingness to bring it in himself; how-

ever, before giving notice, he wished to communicate with Mr. Ceely and Professor Spooner.

Professor Spooner informed the Council that he was desired by Mr. Newdegate to express his sincere regret in not being able to reply to the President's letter, on account of indisposition. He, however, assured Professor Spooner that he would do everything he could to support the Bill.

Letters were then read which had been received from the Medical Examiners in London, naming the days most convenient to them for the forthcoming examinations. Also a letter from Dr. Miller, acknowledging his election as a Member of the Court of Examiners.

The attention of the President having been directed to the admission of candidates from the Albert Veterinary College about to present themselves before the Court of Examiners, a letter was written at his suggestion to Professor Gamgee, desiring that evidence might be furnished to the Council that the Albert Veterinary College had obtained the Queen's sign manual, as required by the Charter.

The *President* submitted a letter just received from the Secretary of State, Sir George Grey, enclosing a petition and draft warrant from Mr. John Gamgee, praying that the Albert Veterinary College might be affiliated with the Royal College of Veterinary Surgeons under Royal sign-manual.

After a considerable discussion :

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Harrison—*

"That the correspondence be entered on the minutes, and that Sir George Grey be informed the Council had no objections to advance to the application made by Mr. John Gamgee, provided he was prepared to resign the Queen's authority, granted in 1859, for the New Veterinary College of Edinburgh."—Carried.

The Annual Abstract of the proceedings of the Council, as prepared by the Committee, was then read, when—

It was moved by *Mr. Ernes,* and seconded by *Mr. J. C. Broad—*

"That the Report be received."

It was then moved by *Mr. Broad,* and seconded by *Mr. Wilkinson—*

"That the Report be adopted."

In submitting the Auditors' Report—

Mr. Surmon, one of the appointed Auditors, not being in attendance, Mr. W. Farrow, of Whitechapel, officiated in his stead.

The Balance Sheet of the Receipts and Expenditure during the past year, as audited, was laid on the table.

It was moved by *Professor Gamgee,* and seconded by *Mr. J. C. Broad*—

"That the Report be received and adopted."—Carried.

The *President* announced to the meeting the death of Professor Dick.

It was moved by the *President,* and seconded by *Mr. Wilkinson*—

"That a letter of condolence be forwarded to the sister of the late Professor Dick."—Carried.

Cheques were ordered to be drawn for the Examiners' fees.

By order of the Council,

WILLIAM HENRY COATES,
Secretary.

At page 311, in the Report of the Special Meeting held March 9th, 1866, the paragraph commencing—"Provided, nevertheless," should read as follows:

Provided, nevertheless, that this Act shall not affect any person who shall have assumed the name or title of Veterinary Surgeon prior to the obtainment of the Royal Charter of the Royal College of Veterinary Surgeons.

THE MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

AT a meeting of the members of the veterinary profession, held on Friday, March 23rd, 1866, at the Midland Hotel, Derby, for the purpose of forming a Veterinary Medical Society, the following gentlemen were present:—

Mr. King, Melbourne (in the chair); Mr. Garrard, Ticknall; Mr. Leech, Bakewell; Mr. Ison, Atherstone; Mr. Reynolds, Mansfield; Mr. Pyatt, Nottingham; Mr. Barker, Bolsover; Mr. Statham, Sudbury; Mr. Cave, Nottingham; Mr. Bailey, sen., Leicester; Mr. Revill, Ilkeston; Mr. Statham, Derby; Mr. Webberley, Castle Gresley; Mr. Taylor, sen., Nottingham; Mr. Rossil, Sandiacre; Mr. Flower, Derby; Mr. Aulton, Spondon.

Letters were received from several gentlemen whose engagements prevented their attendance at the meeting, expressing their intention of becoming members.

It was unanimously resolved that a Veterinary Medical Society be formed forthwith, to be called 'The Midland Counties Veterinary Medical Association.'

The following gentlemen were elected office-bearers of the Society:—

President, Mr. C. Taylor, Nottingham; Vice-Presidents, Messrs. H. Pyatt, Nottingham; W. Garrard, Ticknall; A. Statham, Derby. Treasurer and Secretary, Mr. T. Cave, Nottingham.

The President remarked—I think we must admit that in these meetings will be combined the elements of union, which is strength, and an onward progress in the veterinary art and science; and they will, there is no doubt, prove the means of adding to that harmony and concord which ought ever to exist amongst us as a body, while they will also afford opportunities for that freedom of communication upon professional subjects which cannot fail to be beneficial to all connected with the profession, and at the same time will tend to the gradual disappearing of those little jealousies which ought never to exist, ultimately resulting in unity of sentiment and interest."

THOS. CAVE, *Hon. Sec.*

Veterinary Jurisprudence.

HEAVY DAMAGES FOR THE BITE OF A DOG.

AT the Town Hall, Brighton, before the Under-sheriff and a special jury, an action was brought a few days ago by Mr. West, a miller, of Littlehampton, against Mr. H. Lear, an auctioneer, to recover compensation for the bite of a dog. The damages were laid at £1000, but it was pointed out that this amount was named at a time when less serious consequences were expected from the injuries than had subsequently resulted, and that a much larger amount would be a fair compensation. The plaintiff said: On the 10th of November last, while walking from Angmering to Littlehampton, I met Mrs. Lear, the defendant's wife, driving a small pony carriage along the road, accompanied by two dogs. I was in the act of taking off my hat to her when one of the dogs attacked me. It was a rough dog, with a mane round the neck like a lion. It seized hold of the lower part of the calf of my leg, bit hard, and clung to me. It stopped my progress, and I felt a sensation go right up to my head. The blood flowed, but I managed to walk home. The plaintiff then went on to state that swellings developed themselves under both arms and in the groin; that he had lost his bodily strength, and that from being a strong and hearty man before the occurrence his health and nerves were now completely shattered. His gross trade returns for the last year were £14,000, and his business had hitherto depended almost exclusively on his own bodily exertions. Evidence having been given in support of the plaintiff's statement, it was stated on behalf of the defendant that the liability was not denied, but the amount of the compensation was disputed. The jury, after some consideration, returned a verdict of £800 damages for the plaintiff.

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Bland and Field, Newbury
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Sparrow, S., Cambridge
Wallis, Page, Cambridge

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altrincham
Lewis, Walter, Crewe
Taylor, John Boardman, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Banister, Albert E., Bridport
Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Dudgeon, David, Sunderland
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Plews, Thomas, Stockton
Thompson, Thomas, Sunderland

ESSEX.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, Woodford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

GLOUCESTERSHIRE.

Barling, Frederick Wm., Newnham
Hobbs, Henry, Newnham
Paradise, John, Dursley
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

HAMPSHIRE.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gates, Robert, Andover
Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

HEREFORDSHIRE.

Barling, J. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Hirst, Charles Samuel, Barnet
Proctor, Harrison, Hertford
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Bishop's Stortford
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.

Dickens, Charles, Kimbolton
Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives
Waters, George, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, William, Margate
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst. W. Henry, ditto
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Bridge, Roger, Bury
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, W. I., Worsley, Manchester
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Howell, James, Rochdale
Hutchinson, —, Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawson, John, Manchester
Lawson, John, jun., ditto
Lawson, William C., Bradshawgate. Bolton
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Polding, P. Oswald, Bury
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Taylor, Thomas, Manchester
Twist, Charles, Woolton
Welsby, Joseph, Prescot
Worthington, Wm., Wigan

LEICESTERSHIRE.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

LINCOLNSHIRE.

Batchelder, John, Grantham

LINCOLNSHIRE (*continued*).

Bland, George Colley, Crowland
Bland, William James, Boston
Clarke, Thomas Allen, Horncastle
Cutting, Henry, Market-Raisen
McHugh, John T., Brigg
Santy, Arthur Henry, Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H. Harleston
Carter, Charles N., Swaffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Branford, Wm. Catton, Oundle
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Hunter, H., Newcastle-upon-Tyne
Stephenson, C., Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Cope, W., 3, King's Road, Newark
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Young, Wm., Southwell
Western, John, Eastwood
Wilson, R. S., Ollaston

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

RUTLAND.

Parnell, Charles, Oakham

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jones, James B., Ludlow
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton
Roberts, Thomas, Oswestry
Walters, Robert G., Newport

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Gregory, C. N., Bristol
Hutchings, William, Kimpton
Leigh, Nathaniel, Bristol
Stauffer, J., Wedmore

STAFFORDSHIRE.

Barry, William, Lichfield
Carless, John, Stafford
Carless, William, ditto
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Harry D., Wolverhampton
Pritchard, Richard, ditto
Robinson, William, Tamworth

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes and Lowe, John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.

Callow, John, Horsham
Crofts, Henry, Arundel
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Elkington, R., Coventry
Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Walker, Alfred, Rugby
Watson, Walter, Rugby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Bibby, James, Calne
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, R. Tutnall, Bromsgrove
Harber, W. Alex., Kidderminster
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, J. W., Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Bourdass, George, Bridlington
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, ditto
Cooper, J., Market Weighton, Brough
Cuthbert, John, Leeds
Douthwait, William, Beverley
Dray, Edward C., Leeds.
Edmundson, W., Hornby
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Hedley, F., Richmond
Hedley, J. W., ditto
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Secker, Thomas, Ripon
Stephenson, William, Pickering
Thunton, James, Easingwold

WALES.

Bodington, George, Canton, Cardiff
Kennedy, Thomas, Wrexham
White, Thomas, Rhyd-y-Glaves, Corwen.

SCOTLAND.

ABERDEENSHIRE.

Snowball, Matthew C., Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

FORFARSHIRE.

Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso
Rowe, William, Jedburgh

ARMY APPOINTMENTS.

War Office, Pall Mall, *March 29th.*

20th Hussars.—Veterinary Surgeon (first class) William Johnson, from the Bengal Establishment, to be veterinary surgeon; March 30th.

21st Hussars.—Veterinary Surgeon John George Bushman, from the Bengal Establishment, to be veterinary surgeon; March 30th.

Royal Artillery.—The undermentioned veterinary surgeons, from the Bengal Establishment, to be veterinary surgeons:—Robert Walter Murray, Henry Bath, Samuel Thomas Goddard, and John Field; Veterinary Surgeon Charles Edward Barton, from the Bombay Establishment, to be veterinary surgeon; March 30th.

MEETING OF CATTLE PLAGUE INSPECTORS.

On Friday last a meeting of veterinary surgeons, who are also inspectors under the Orders issued in Privy Council, was held at the Saracen's Head Hotel, Chelmsford, Mr. H. Seaman in the chair.

The *Chairman* opened the meeting by a lengthy address, commenting on the position held by them under the local authorities. After sitting down, the following resolution was moved by *Mr. Shave* (Chelmsford):

"That in the opinion of this meeting the remuneration of inspectors should be by fixed salary, and not according to the number of cases that may come under their notice; because the system of paying inspectors only for services while attending upon plague cases is wrong in principle, as it is conducive to apathy and indisposition to investigate, foresee, and insulate mediums of contagion; it also induces the feeling with some holders of stock that the more plague the more business for the inspectors, and, consequently, the greater their income."

Mr. H. Webb (Sampford) seconded the motion, and, on it being put to the meeting, it was unanimously agreed to.

Mr. J. J. Hazell (Great Bromley) then moved,

"That this meeting pledges itself, by every means in its power, to prevent the spread of the cattle plague; and hopes that by intercepting all causes whereby contagion may be carried from one place to another, the inspectors may do great good in the country, and inspire confidence in their efforts in the minds of holders of stock."

Mr. T. Young (Dunmow) seconded the proposition, and it was carried by acclamation.

The *Chairman* said it became a question whether they should memorialise the Privy Council, or in what way they should bring the matter before it. In his opinion he did not think it was of any use appealing to the local authority, but some means should be devised to bring their views under the notice of the Privy Council.

Mr. Shave was of the same opinion. He did not see any practical benefit likely to result from an application to the local authority.

Mr. John Young (Braintree) then proposed the following resolution:

"That this meeting further resolves that the signatures of inspectors and members of the Veterinary College resident in the county of Essex, who approve of the foregoing resolutions, be obtained, and

that copies of these resolutions be forwarded, with the names, to the Privy Council."

This motion was agreed to on being seconded by *Mr. Hazell.*

A vote of thanks to the Chairman brought the proceedings to a close.

OBITUARY.

Of late "the last enemy" has been thinning our ranks, and now a chieftain has fallen. We have to record the death of Professor Dick, of Edinburgh, who died April 4th, 1866, of heart-disease, in the seventy-third year of his age. The name, at least, of the late professor is familiar to most of the members of the profession, and to many he was personally known. He obtained his diploma January 27th, 1818. He was a man possessing the strong natural abilities characteristic of his countrymen, quick of perception, and not given to change. His career has not been an undistinguished one, either as a professional man or a citizen. By the citizens of Edinburgh he was esteemed for his genial and kindly temperament, and as a friend he was affectionate and warm. The editor of the *Daily Review*, writing of him, says:

"Professor Dick possessed qualities which eminently fitted him for the arduous task of founding a school of veterinary medicine; and rarely has success been so complete and so entirely due to the energy, perseverance, and attainments, practical and scientific, of the individual. The Edinburgh Veterinary College was founded by him, alone and unaided, in 1818; it was patronised by the Highland and Agricultural Society of Scotland in 1823, and established by Royal Charter in 1842 During that long period the College, as an educational institution, and Professor Dick in his relations to it as well as in his general practice, have commanded the confidence and ready co-operation alike of the scientific and the practical, of the proprietors and the tenant-farmers of Scotland. Professor Dick was readily acknowledged by the most accomplished medical professors of our university to have a position as scientific as their own, while the practical mind of the agriculturists of Scotland recognised in the founder of the Edinburgh Veterinary College one in whom they at once learned to respect the veterinary art. It is this combination more than anything else which presents the late professor in the light which may be fairly claimed for him. As a medical student attending the classes of the Edinburgh University, he took a very high place, and continuing as he did his ordinary calling, he drew forth the high encomiums of a penetrating teacher. As a medical colleague—for such he might be called—he had at his annual examinations the leading professors and medical practitioners of the city, all of whom bore the most willing testimony to his great merits as a man of science himself, and a teacher of great directness and experience. On the part of one or two of the university professors with whose department he was more directly connected—Professor Goodsir especially—regret was often expressed that the duties of a large practice, or perhaps also the tendencies of a mind so practical as almost to shirk literary work, deprived veterinary science, and through it medical science generally, of much which would have been most valuable and suggestive. On the other hand, the remarkable penetration he had in the detection of disease—scarcely surpassed by the most distinguished medical practitioner our city has possessed—and which was in him a perfect intuition—and the thorough honesty and in-

dependence of his opinions—no one ever dreaming that Mr. Dick would say ought but what he thought, gave him very great influence over the agriculturists of Scotland, and, more than anything else, tended to open the way for the general introduction of the veterinary art, and of the practitioners educated at his institution. It was not a slight influence which secured this result. A prejudice prevailed against professional training; but that prejudice was disarmed as an almost unerring practice on the part of the professor showed that there was at least nothing incompatible with successful practice in the scientific and accomplished teacher. The treatise on the veterinary art, which originally appeared in the *Encyclopædia Britannica*, and was afterwards published separately, is the only formal treatise which Mr. Dick has left behind him; but, however valuable, it can scarcely be said to give a just impression of his high attainments and great practical knowledge."

In city affairs the late professor appears to have taken a warm interest, and especially in connection with several scientific and professional institutions. He was treasurer for many years of the Royal Physical Society, and got them out of their pecuniary difficulties by his energy and good management. He received a claret jug as a testimonial for his services from the members of the society. But his sympathies were not confined to the city, for country matters might be alluded to where his advice and contribution were freely given.

"Professor Dick was confined to the house for the past two or three weeks, occasionally suffering severely from a difficulty of breathing, arising from heart-complaint and dropsical symptoms. Recent exposure on professional duty had no doubt accelerated the disease under which he sank."

We have likewise to record the demise, on April 8th, of Dr. B. G. Babington, F.R.S., also in the seventy-third year of his age. He was for a long time connected with the Board of Examiners of the Royal College of Veterinary Surgeons. Those who knew him esteemed him highly, not only for his professional abilities, but also for the amiability of his disposition, which was so great as often to gain for him, not only the respect but the love of his patients. Dr. Babington was born in 1794, and was educated at the Charterhouse. After passiug through Haileybury, he entered the Madras medical service in 1812, but retired from it in 1819, and studied at the University of Cambridge, where he graduated M.D. in 1830. In 1831 Dr. Babington was elected Fellow of the Royal College of Physicians. He was attached to Guy's Hospital, and was Physician to the Charterhouse, to the Deaf and Dumb Asylum, and to the Margate Infirmary; consulting physician to the German Hospital, to the City of London Hospital for Diseases of the Chest, to the New Equitable Assurance Company, and to the English and Scottish Law and Clergy Mutual Assurance Company. Dr. Babington has been for many years a Fellow of the Royal Society, and is known as the author of a 'Cyclopædia of Anatomy and Physiology,' and of various papers in the 'Medico-Chirurgical Society's Transactions,' as editor of Feuchtersleben's 'Medical Psychology' (published for the Sydenham Society), and as translator of "The Epidemics of the Middle Ages.'

THE

VETERINARIAN.

VOL. XXXIX. No. 462. JUNE, 1866. Fourth Series. No. 138.

Communications and Cases.

CATTLE PLAGUE—OUTBREAK OF THE DISEASE IN IRELAND.

Reports of the appearance of the much-dreaded "pest" in Ireland were received with suspicion on their first arrival, and even now that they have been officially confirmed there exists a disinclination to accept them as truth. So terrible would be the consequences of the spread of cattle plague in a country so essentially a stock-producing and stock-exporting one, and one so ill able to bear the losses which must result, that any intelligence, however wild in its character, would meet with credence rather than this.

At present we refrain from the expression of any positive opinion as to the nature of the disease which has led to the slaughter and burial of some cattle in Drennan, County Down. From the professional evidence we are justified in concluding that cattle plague has really attacked the stock in that part of the country, and from certain statements which have transpired it would seem that the disease has existed for some weeks, and even that infected cattle have been sent over to Liverpool. Assuming that the information received is correct in every particular, the salient point of inquiry is—How did the infection reach the Irish shores? Doubtless many speculators will be ready with the stereotyped phrase, "the cause is atmospheric." We, however, disciples of a practical school of reasoning, look to a proper medium through which the virus may have been conveyed.

Mysterious outbreaks, enough to satisfy the most imaginative, have occurred in our own country, and the supporters of the atmospheric theory point triumphantly to those inexplicable outbursts of the affection in localities where no cattle, nor other creatures, could have carried the infection, where, in fact, everything to them is impossible save their own favorite system of explanation. That in many places the origin of the plague is obscure cannot be denied, and a lifetime might be ill spent in trying to clear away the difficulties which surround particular cases. Some of them have been investigated and found to admit of a rational explanation. Little good would arise from the labour necessary to prove the exact course taken by infecting agency in every instance.

Unless it be for the purpose of violating the precept contained in the old adage, about locking the stable door after the steed is stolen, we do not quite understand what is to be gained from an inquiry into the circumstances under which cattle plague was carried to Ireland—whether infected cattle were smuggled over, or infected drovers' clothes or boots came in contact with healthy Irish stock, or whether even in the casks of disinfected sheep-skins there may have lurked skins that were not disinfected. Among a dozen possible means of conveyance, and a few probable ones, it seems to us to make very little practical difference which was the particular one that effected the mischief. In the present age, pre-eminent for its commercial tendencies, distinguished by the development of vast resources which eventually lead to an interchange of commodities, it is no longer possible to carry out a system of isolation. If cholera ravages a neighbouring state, our relations with that country forbid us to obtain security at the expense of commercial and political interchanges. Not only in the interests of advancement are the marvellous facilities of transport enlisted—the good and evil still travel together. The ship that brings a freight to add to our health of stock conveys also the germ of a malady that may sweep our herds away like chaff. The merchant who leaves a foreign land with the products of his industry may embark with the virus of a malignant malady in his system and be in his own home before the incubative stage has passed.

From the published returns it appears that the number of animals attacked by plague is considerably lessened, but it is to be noticed that the disease constantly finds new centres, and that it is as little amenable to treatment as at first. Some of the attacks are mild and the animals recover from them,

but medicine has as little influence in cutting short the course of the disease, as it had in the first cases that were placed under treatment. The Cattle Plague Commission, in its third report, makes the unsatisfactory admission that all powerful drugs have the effect of increasing the disease; and after investigating the nature and treatment of the cattle plague, more closely, perhaps, than any malady was ever investigated before in the history of medicine, unanimously decide that the removal of all solid food and the use of soft mashes and liquid nutriment is the system which promises best for the wellbeing of the diseased animal.

With this decision we do not quarrel; on the contrary, it accords with our convictions; but with the system which is now being pursued we have no sympathy. Either let it be understood that animals are to be treated, or that the affection is to be met wherever it appears as men meet an invading enemy. The mixture of two opposite methods, the poleaxe in one hand and the drinking-horn in the other, form a picture which essentially represents indecision and imbecility. That the disease will ever cease under the present arrangements is more than doubtful; as new stocks are brought in, new outbreaks occur, and further losses are entailed. Meanwhile public confidence in the resources of science is shaken and the members of the veterinary profession, instead of maintaining a consistent attitude, are vacillating between the two characters of physician and executioner. At first the novelty of the subject was a sufficient excuse for irresolution, but now that we have become familiar with the disease, it is time for the profession as a body to pronounce upon it, and to enforce their recommendations by every means in their power. Let it be made known whether, after nearly a year's experience, the followers of the science of veterinary medicine believe the disease to be a curable one, and therefore to be healed for the interest of the country; or whether, admitting the inutility of medicinal measures, and recognising the danger of allowing diseased animals to exist and spread the infection, they have determined to adopt the less scientific system of immediate and unconditional slaughter of every infected animal so soon as the disease is discovered. We repeat, the time for decision has arrived.

OBSERVATIONS ON SUPERFŒTATION.

By Professor Varnell, Royal Veterinary College.

The following remarks on superfœtation have had their origin in the facts contained in the subjoined communication received from Mr. G. Lewis, M.R.C.V.S., Monmouth:

April 6th, 1866.

"Dear Sir,—A remarkably fine cart-mare, the property of a farmer in this neighbourhood, was covered by a cart-horse on May 20th, 1865; but showing symptoms of œstrum subsequently thereto, she was again covered by the same horse on June 19th. On Sunday morning last she aborted *two fœtuses, each being in a different stage of development*, one of them being apparently about a month older than the other. It is worthy of remark that the mare aborted last year.

"I am, dear Sir,

"Yours truly,

"Geo. Lewis."

To Professor Varnell.

That doubts exist in the minds of many physiologists, both human and comparative, as to the possibility of *superfœtation* ever taking place, cannot, I think, be denied; while, on the other hand, there are those who believe not only that such a phenomenon does occasionally occur, but they adduce such proofs of it as cannot fail to convince the most sceptical on the point. Veterinary literature, in this country at least, does not record any decided cases of *superfœtation* that I am aware of, but if the reader refers to Gasper's 'Forensic Medicine,' vol. iii, page 371, he will find that several cases are mentioned as occurring in the human female; and in the same article he will also observe that the authenticity of many supposed cases of *superfœtation* are refuted by arguments apparently equally conclusive. I have never met with an instance of *superfœtation*, but have often heard practitioners and others allude to such occurrences, both in the *cow, ewe, sow*, and *bitch;* and although I have no right to impugn the veracity of my informants, nevertheless, as their statements were unaccompanied by sufficient proof, I do not feel justified in quoting them as facts. Believing, however, in the possibility of *superfœtation*, and also in its importance, I am induced to offer a few remarks upon this ill-understood question. I can easily understand that disputations may arise from such occurrences in the

human female, both in reference to the heirship of property as well as other circumstances which I need not dwell upon in connection with the married life. Such consequences would, of course, not arise from similar occurrences in the lower animals, but, nevertheless, I can imagine that serious disputes might take place as to the *sireship* of some *thoroughbred stallion, prize bull, ram,* or *dog*. To illustrate this I will take the case Mr. Lewis refers to in his communication, as one of actual *superfœtation,* and suppose that the second time the mare was covered it was by a different horse, and that one of these horses was of that particular breed which rendered it highly desirable that his stock should be preserved, no other chance having ever before offered itself or probably would do again to perpetuate the breed. Under these circumstances, I would ask, how could any one positively assert, supposing both foals to be foaled at the same time, and to have every appearance of living and doing well, which of the two belonged to the horse whose stock it was desirable to preserve? Now, although a person might, from the appearance of the foals, judge rightly, nevertheless such a decision would be little better than a guess, and evidence of this nature cannot be relied upon. We all know that *twins* are not always equally developed at the time of birth, and also that if one animal only is given birth to, it is not an uncommon thing for it to be more fully developed in one instance than in another, the time of utero-gestation being precisely the same. So also I believe that in *extra-impregnation*—a month apart, for instance—that the product of the last conception may possibly, as far as development is concerned, be in advance of that of the first, and as such it would, of course, be looked upon as the get of the sire the dam was first covered by. This mistake would lead to very grave results in perpetuation of particular breeds of animals; it would undo that which the trouble and perseverance of the breeder had been years in bringing about.

I may be told that such circumstances, if they actually take place, are very rare. This may be true, nevertheless, when it is desirous to make any particular cross, or to perpetuate a certain breed of animal in all its purity; it suggests the advisability of allowing the sexual connection of those animals only it is desirous to breed from. The argument against the possibility of *superfœtation* is, that as soon as conception takes place the *os uteri* is closed by an albuminous substance, and thus the possibility of a second impregnation is prevented. Now, as far as the lower animals are concerned, those I have particularly alluded to, this

dictum must be received with caution. I believe that we have not any direct data as to the precise period when such closure does take place. From my own dissections of pregnant animals I am of an opinion that the *os uteri* is not at all times so fully or so early closed as many *physiologists* and *anatomists* have supposed, but, as before stated, we have no reliable data on the point. I have found one horn of the uterus of the female *ass* impregnated and its inner membrane thickened, while the other had not undergone this change. In this case the *os uteri* was not closed. Such being so, I can see no reason why the unimpregnated cornea cannot be impregnated, unless it can be clearly shown that as soon as conception takes place both ovaries cease to mature Graffian vesicles and discharge their ova into the Fallopian tubes. Under such circumstances additional impregnation could not take place; otherwise it seems to me that it might, although several weeks had elapsed since the first conception.

This subject is of far greater importance than many would be inclined to think, and it is one which the members of our profession would do well to take up. The opportunities to cultivate such a division of comparative physiology are great, and much light might be thrown on a subject which, in a physiological point of view, is highly important. I may further add that circumstances might occur in which the question may become a legal one.

THE CATTLE PLAGUE, TYPHUS CONTAGIEUX OF THE FRENCH, RINDERPEST OF THE GERMANS, ISCHUMA OF THE RUSSIANS.

By W. Ernes, M.R.C.V.S., London.

(*Continued from* p. 379.)

As to those which followed the troops on the expedition, *colonnes expéditionnaires,* M. Renault gives an extract of the report of one of the veterinary surgeons attached to the army, which is as follows:—"The oxen which follow the troops on these expeditions are various in number, according to the strength of the division which they have to supply; these animals have to lie on the bare ground, without any shelter, in the centre of the square formed by the troops; they are not allowed any rations of forage, they must feed on what they can get, either on the road, at the halting-place, or in the camp. Sometimes they are allowed to

graze in the neighbourhood of the camp when there is no fear of their being lifted by the Arabs. They are, therefore, exposed to great hardships and privations, have to undergo great fatigues, according to the season and the rapidity of the movements of the troops; the roads also are difficult and broken. Thus, during the excessive heat of the summer, when the watercourses are dried up, and the vegetation charred by the sun, they are obliged to travel with their noses in the dust, respiring a burning atmosphere, without any water to allay their thirst, and with no other food but a few tough and dry roots which they get by turning the soil with their feet. In winter they have to battle with the cold, which is sometimes excessive, and the rain and snow, which fall in an abundance unknown in France. One must, therefore, not be surprised that many of these animals die during or immediately after these expeditions, or that they are affected with serious maladies which attack those attenuated and emaciated animals which have not fallen a sacrifice to the privations. Amongst the grave maladies the diarrhœtic fevers, or those of a carbonous nature, are most prominent; but neither myself nor my colleagues have ever met with the *typhus contagieux* (cattle plague) or any other malady transmitted by contact, either during the expeditions or after their return. Surely, if an unhealthy climate or privations of every kind on animals already exhausted—if hunger and thirst, prolonged forced marches, without forage or water, under a burning sun—if the exposure of nights and days passed in rain and snow, with an almost polar cold, &c., could, as has been asserted by some, produce the malady in all horned cattle, without distinction of race or country, there is certainly nothing better calculated to produce it than those causes which have just been enumerated, and to which those animals were exposed during more than fifteen years of incessant warfare. We may add to this the recent four years' war in America between the north and south, where thousands of oxen must have been congregated for the supply of the largest army ever in the field—speaking of that of the north only—and where the animals must have been subjected to all sorts of privation, and exposed night and day to the inclemency of the weather, besides the rapid marches to which those troops were at times subject. Still, we have heard of no cases of this peculiar malady, though every other disorder seems to have prevailed amongst them. Egypt has but few cattle—does not rear a sufficient number for its wants. It therefore draws large supplies from Nubia; these principally come from Kardafan and Sennaar, and amount sometimes from 1500 to 2000 head of cattle in

one convoy. From either the negligence or the improvidence which is so characteristic of the people of the East, it is very seldom that any provisions are made by the agents who have the charge of these expeditions, which are from a 1000 to 1500 miles. In their journey they keep as close to the banks of the Nile as they possibly can, but they are frequently obliged to deviate from it, and then they are obliged to traverse large tracts of arid deserts, where these animals, which have been reared in the luxuriant plains of Nubia, have to undergo the sudden contrast of privation. The stoppages, moreover, are made in unprotected places, and where nothing is to be had but a scanty supply of beans and straw, always inadequate to the number of animals, which is unknown, as well as the time of their arrival, and it often happens that these halting-places, *chaunes* (as they are called by the Arabs), are far from cultivated districts. The evil consequences are not slow in overtaking the convoys of cattle; and it generally happens where there are no means to combat disease—nothing being provided—their route may be easily traced from the starting-point by the gradually increasing number of the dead oxen which mark the road they have gone. When they come to their journey's end and stop near Cairo, they are not uncommonly reduced to one half or even one third of their number, while the remiander are emaciated and reduced to the worst condition. The maladies from which they suffer, and from which so many perish, are dysentery, complicated with bilious affections; but it has never been observed that these maladies have taken the character of typhoid fever or have been in the slightest degree of a contagious type. This account is taken from the notes of M. Prince, who was for many years Director of the Veterinary School of Chanbrah, in Egypt. But Egypt has not always escaped the ravages of the rinderpest. In 1840 the then viceroy distributed a great part of the land amongst his children and the civil and military officers, reserving vast estates for himself. This gave great stimulus to agriculture, but it was found that the number of oxen was insufficient for the purpose, and, consequently, it was necessary to procure a supply from a distance. The viceroy, his son, and some other proprietors, sent agents into Anatolia and Karamania, countries which by their proximity and the price and quality of their cattle, offered great advantages. Great numbers of cattle were bought in the winter of 1840-41, which were sent to Adana, Jarson, and Kazanli, for embarkation; but before this was done an epizootic broke out amongst them, which killed a very many. Instead of

abandoning the remainder, they were hurried on board, and, as might have been expected, the malady continued and a great number perished on the passage and were thrown overboard. Those which survived were debarked at Alexandria in the spring of 1841. The malady, instead of decreasing after the landing, increased in intensity. The proprietors, in the hope of staying the mortality, distributed them on their estates, but this had a very different effect, for wherever they went they infected the cattle of the country. The contagion rapidly spread from Lower Egypt to the Delta and Upper Egypt, where it attacked the buffaloes. Three fifths of the cattle of Egypt perished through it, and the ravages were so great that, contrary to custom, agricultural labour had to be performed by horses, asses, mules, and camels. This was the rinderpest."

Professor Zlámal, of Pest, said, at the International Veterinary Congress at Vienna, that they had the breed of steppe cattle in Hungary, and that their herds were accustomed, like those of the Caucasian steppes, to be out winter and summer in the open air; indeed, in every respect, their treatment was the same. He (Professor Zlámel), since 1838, had had nearly every year an opportunity of seeing the cattle plague, and for the first six years had done so without interruption, and by following it up step by step, and often in places where he was puzzled to trace the infection; but by consulting the calendar as to the times of the cattle fairs, and examining cattle dealers and others, he had always clearly traced out the foreign importation. It is only by inaccurate observations and inadequate investigations that apostles have arisen who pretend that the rinderpest is of spontaneous origin in Hungary, without, however, being able to produce the slightest proof of the spontaneous outbreak of it. Since 1828 there had been three invasions; the first lasted until 1842; the second, in 1848, lasted until 1856; the third, in 1861, which still prevails, all of which were clearly traced to importations.

I will here allude to the outbreak of this fatal malady in England in June last. Whatever might have been the opinion then as to the origin, there can hardly be a doubt on this subject at the present time; for had it been from the close and foul state of the London dairies, why should we not have had it before, when those sheds were in worse state of overcrowding, foulness, and ventilation—that is, before they were inspected and licensed? Besides, there were places where nothing was wanting either in cleanliness or ventilation, yet they were some of the first to suffer. The hot wea-

ther had as little to do with it, for it broke out in London before the hot weather set in; moreover, it is asserted that in the steppes the rinderpest is always more virulent in proportion as the herds are driven farther north towards the sources of the Volga or the other large rivers, and less so as they go south or towards the mouth of the same rivers. Whether we got it direct from Russia, which is the most probable, as it broke out shortly after the landing of, I believe, the first cargo of Russian cattle; or through Germany and Holland, there cannot be any doubt as to its being an imported disease, propagated by contact and infection, and not spontaneously, in this country.

In conclusion, it may be considered from the foregoing that the origin of this mortality is clearly traceable to the steppes of Russia; and, considering the numerous losses sustained from time immemorial by the different states of Western Europe, the means of exterminating, or, at least, of mitigating this dreadful pest, becomes an important question. The Russian government has been applying itself to this point for the last few years, by instituting inoculations of the disease in the steppes, which it is supposed produces a mitigated form of the disease. The inoculated cattle are branded; and as there are no instances on record of cattle having taken the malady twice, so if none of the cattle were allowed to leave the steppes without being branded as a proof of successful inoculation, then the risk of the spreading of the disease westward would be to a certain extent prevented. But this, in my opinion, may not be the only way of exterminating the disease; and for this purpose the Russian government should not be left alone, but should be assisted by the other governments, which are just as much interested in it. A congress has been recently formed to inquire into the causes of the cholera: why should not a similar congress be formed to inquire into the causes of the rinderpest and investigate it on the spot? There is no doubt that the cause is either in the geological relation of the soil or in the nature of the vegetation; most likely in the former, being miasmatic, the same as that which produces agues and other endemic and enzootic diseases in low lands and marshy districts, and not in the breed of cattle, though, as before stated, they are of a peculiar and primitive breed. I have no doubt that other breeds, if introduced into those localities, would be subject to its spontaneous attack, and, not being of the same hardy breed as the steppe cattle, would, in all probability, suffer more severely. It is stated that the few parts of the steppes which have been colonised suffer less from the malady, on account of

the advance of civilisation. This evidently points to miasmata as the cause of this pest. Miasmata are inseparable from all uncultivated districts intersected by large sluggish rivers, spreading in certain seasons of the year over large tracts of the country, forming islands of various sizes, the water-courses being dried up by an almost tropical sun in the summer, whereby those poisonous vapours are exhaled which cause those terrible epidemics such as yellow fever, pestilence, &c. Confining the rivers to their beds and proper draining are the means to render these immense plains more salubrious to animal life, but this, in a thinly populated country, is next to impossible.

The most important question for us is how to get rid of the dreadful malady which is now so fearfully decimating our beautiful breed of cattle, which has cost so much to produce and bring to perfection.

Nothing short of the compulsory slaughter (compensating the owners) of the infected, and even those which have been in contact with them, and stopping the traffic of all cattle, with proper disinfecting all objects and persons who had been in contact with the sick, will extirpate it; but this is not an easy matter now we have allowed it to spread nearly over the whole of the United Kingdom.

To guard against future importation of the rinderpest and any other contagious disease, all importations of cattle should be restricted to certain parts, where lairs and slaughter-houses should be provided, where the diseased and infected should be slaughtered, instead of being sent, as now, into the markets, where they spread the disease. The others should perform a quarantine of more or less duration.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from p.* 198.)

Having given a general description of the botanical characters, &c., of the natural order *Scrophuliariaceæ*, we will now proceed with the consideration of a plant belonging to it which occupies a somewhat prominent place as a medicinal agent, viz., the *Digitalis purpurea* (*Purple Foxglove* or *Throatwort*). The following are its botanical characters:—"*Digitalis purpurea* (*Purple Foxglove* or *Throatwort*). Biennial.

Roots fibrous. In the first year a tuft of radical leaves is thrown up, from the midst of which rises, in the second year, a stem 1—5 feet high, which is erect, wand-like, and leafy, slightly angled and downy, in some varieties with a purple tinge, as well as on the lower surface of the leaves. *Leaves* alternate, ovate-lanceolate, or oblong, crenate and rugose, downy, especially on the under surface, tapering at the base into winged footstalks. *Racemes* terminal, long and lax, on which the pendulous flowers appear on one side in slow succession. *Flowers* crimson, purple, marked with eye-like spots, and hairy within; sometimes white. *Calyx* 5-parted, segments ovate or oblong-acute. *Corolla* declinate, much longer than the calyx, contracted at the base, campanulate and ventricose above, with an oblique limb; upper limb emarginate, lower 3-fid, with the middle lobe the largest, all short, obtuse. *Stamens* 4, didynamous, ascending; *anthers* smooth. *Stigma* bilamellate. *Capsule* ovate-acute, with a septicidal dehiscence. *Seeds* very small, of a pale brownish colour, and pitted."—*(Royle.)*

The name of this plant is derived from *digitale, the finger of a glove,* which its flowers resemble, and *purpurea, purple.* In reference to the name of *Throatwort,* which is sometimes given to it, the following remarks in a work on poisonous plants, by Messrs. Sowerby and Johnson, will throw some light:—"The English name *Throatwort,* applied to it in some parts of the country, originated in a fanciful resemblance between its hollow blossoms and the cavity of the throat as viewed through the open mouth; and in the days of 'signature medicine,' as they have been termed, when every plant was supposed to indicate, by certain peculiarities of feature, the organ the diseases of which it was destined to cure, the curious spots on the inside of the flower of the *Foxglove* were compared to those preceding or accompanying ulceration of the human throat." This plant, which, as a medicinal agent, is more or less familiar to most of us, is found growing in many parts of this country, about roadsides and the borders of woods, especially on gravelly or sandy soils. It is a very elegant plant, with a stem from two to five feet high, with alternate broad, dark green leaves. Its flowers, which are of a purple colour, marked on the inside with numerous spots, appear in June and July, and its seeds ripen in August and September. There are several other varieties of foxglove cultivated in gardens, some having white flowers spotted with a shade of cream colour; their growth should not be continued, as many cases showing the fatal effects of these plants in unqualified hands have been recorded. Messrs.

Sowerby and Johnson, in reference to this, write—"No such remedy should ever be admitted in domestic or unauthorised practice. The *Foxglove* or *Throatwort*, though a valuable, is a dangerous agent, even in the hand of the experienced physician; and that danger is increased a hundredfold when it is administered by one ignorant of its powers, and incapable of watching and palliating their action. It would be, indeed, about as wise to trust a child with a lighted taper in a magazine of gunpowder as human life to the incautious wielder of a remedy so deadly." The parts of the plant which have been used in medicine are the leaves and seeds, rarely the latter. The former should be gathered at the second year of growth, about the months of June and July, just previous to the plant coming into flower, and should be obtained from plants growing spontaneously in open situations, as possessing more active properties than the cultivated ones. They should be dried in a dark room, and either the leaves or powder kept in well-stoppered bottles, the light being excluded by their being covered by some dark coloured ones. "As both undergo changes by keeping, whereby their medicinal activity is considerably diminished, they ought to be renewed annually. Dried foxglove leaves have a dull green colour, a faint odour, and a bitter nauseous taste."

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 381.)

"Laminitis" is comparatively a new term introduced into veterinary nosology. Whether it conveys to the mind of the reader the precise nature of the disease seems by some persons to be a question of considerable doubt. If an inflammatory action of the soft parts of the foot be considered to be an inflammation of the laminated structure, then the foot must be often looked upon as suffering from "laminitis." It has been a question with some practitioners whether there *really* be such a disease.

The definition of laminitis, according to "Oliphant," is "an inflammation of the *laminæ* of the feet, namely, of the connecting medium between the coffin-bone and the interior of the hoof, there being numerous fleshy plates which support the hoof. The coronary ring is contracted, the soles become convex, the horse puts his heels to the ground first, and goes

short, and lameness ensues. Laminitis is such an alteration in structure as is, without, doubt unsoundness." This, I take it, is an echo of the evidence given by a witness at the suit of "Hall *v.* Rogerson," tried before Mr. Baron Alderson in 1847. The plaintiff sought to recover the price of a horse sold to him by defendant, together with other charges, as the animal was lame. The evidence proved that the defendant, having purchased the horse, *warranted sound*, believed he was justified in *selling* him with a warranty of soundness. The jury found for the defendant, owing to much time having elapsed between the time of purchase and the giving of notice, and also from the fact of the plaintiff having (through his servant) driven the horse severely, and met with an accident. This definition refers to those cases of a *chronic* nature when it is to be presumed a horse would be submitted for examination as to *soundness* in case of purchase on warranty. This case has been alluded to for the purpose of offering a little food for reflection. "Founder" is the old name by which this disease was known. Markham's 'Masterpiece' contains some quaint remarks upon founder, a few of which may afford the means of learning the opinions of the ancient doctors:—"A horse is said to be foundered of his feet when he hath such a numbness and pricking or ringing within his hoofs that he hath neither sense nor feeling of his feet, but is in all respects like a man that, by hard or crooked setting, hath both his feet asleep (as we call it), during which passion we know we can neither well go, nor stand; and even so it fareth with a horse in this case, for the course of the blood being stopped, those obstructions cause this torment. It cometh most commonly when a horse is very fat, and hath his grease molten within him, and then suddenly cooled by taking his saddle off too soon, or by standing up in the cold unstirred, or else by letting him stand in some shallow water little higher than his fetlock. A horse may also be foundered by wearing straight and uneasie shoes, especially in the summer season, when a horse travelleth upon the hard ground. The signs to know it are, the horse goeth crouching, and drawing all his four feet within the compass almost of a peck, and will stand so fearfully as though he stood upon needles." The mode of cure is something marvellous. Bleeding appears to be the first act performed. The wounds must be dressed thus:—"And when it hath bled, as above said, put it all into a vessel, then stop the wounds with some horse-dung, or some earth, and make a charge with the blood in this sort:—Take as much wheat-meal, bran and all, as will make the blood somewhat

thick, and put it into the blood; take eight or ten eggs, and break them also into the blood, shells and all; take a pint of strong vinegar and a quantity of bole amoniack brayed, and put them into the blood also; which done, you shall stir them all together; then shall you with your hand lay the charge all along upon the reins of the horse's back, upon his buttocks, and down his shoulders. When you have laid on this charge thus, you shall take two long linen rags, dipped in the same charge, with which so dipped you shall garter the horse above the knees of his fore legs, somewhat hard, and likewise with two other like rags, so dipped, you shall garter him hard above, both his hinder hoofs also; that done, cause him to be walked upon the hardest ground you can find for the space of two or three hours; if he be loath to go, as commonly he will be, let one follow him, and beat him with a stick or wand to force him to go; then, after his walking, let him be set up and tied to the rack, that he lie not down, and there let him rest two or three hours; which done, let him be walked again two or three hours more aforesaid; then set him up and let him feed; and when you give him drink, which you may do within two or three hours after his feeding, let it be a warm mash of malt and water; then let him feed a little after it, then ride him a little; and if you let him stand an hour or two in a pool or standing water up to the belly, and one upon his back, it is good also; and after that ride him again a little; then let him be set up well dressed and covered, so by little and little ride him a day or two, and then you may boldly journey him; for it is riding that brings the horse to the perfectness of his feet, and you shall find your horse as sound as ever he was." It is understood from Markham's observations that he was as ignorant of the nature of founder as the horse was. He fancied a foundered horse to be suffering, as we sometimes do, from cramp in the limbs, owing to a partial obstruction or impediment in the circulation. The sensation described by him does not take place until the obstruction be removed—until our limbs assume their normal position. I do not see the analogy. Markham's knowledge of physiology and therapeutics were on a par.

Now, it may be asked, is it possible that a poor dumb creature should have been treated in the manner described for founder? There are persons, even in the nineteenth century, who have the effrontery to assert that the veterinarians of the present day are not much in advance of the farriers of old. One thing is evident—those who make such assertions cannot know much of the practices of either period;

they are alike ignorant of what men in the olden time did and what modern veterinarians are doing. Men who speak of the profession in such terms are slow to think well of others, and speedy to entertain good opinions of themselves; indeed, they are full of egotistical nonsense.

We will make a jump to Youatt's time, and quote a few lines from his book. These will contrast very strongly with the remarks which have preceded them.

"If a horse that has been ridden or driven hard is suffered to stand in the cold, or if his feet are washed and not speedily dried, he is very likely to have 'fever in the feet.' There is no more fruitful source of inflammation in the human being or the brute than these sudden changes of temperature." Again, he states—"The feet and lungs are the organs oftenest attacked, because they have previously suffered by our mismanagement, and are most disposed to take disease, and that which would cause slight inflammation of other parts or trifling general derangement will produce all its mischief on these organs; therefore it is that horses the crust or laminæ of whose feet are warped or obliquely placed are most subject to it." These observations will not stand good in the present day. Mr. Youatt informs us that change of temperature is the most fruitful cause of laminitis. What would the author have said of the Turkish bath? If washing the feet and legs of horses with cold water, when the animals were heated, produced laminitis, I must have seen a goodly number of cases during my sixteen years' sojourn in Ireland. In the establishment I presided over it was the custom to wash the legs and feet of every horse brought into it to be fed. I am not aware the same practices are observed throughout that country. I do not know of any case of laminitis having occurred by adopting the washing system. The idea of change of temperature I should quite abandon nowadays. I don't mean to assert that in some states of the system these sudden changes will not be hurtful, but in the majority they are perfectly harmless.

With reference to treatment, the writer is again in strong contrast with the former author. After scrutinising what remedies are most advisable, such as bleeding, physic, and lotions, poultices, hot fomentations, blisters, &c., he strongly urges that the patient should not be hurried in getting on his feet. It should be left perfectly to his own discretion, nor should walking exercise be permitted until he stands firm on his feet. When that is the case, and the season will permit, two months' run at grass will be very serviceable. The contemporary of Mr. Youatt, the never-to-be-forgotten

Blaine, has written a very good article upon founder; and his observations confirm the experience of Mr. Youatt. Blaine alludes particularly to the standing on shipboard as being a ready source of founder, &c. He, as well as Youatt, strongly urges the necessity of bleeding in the *toe*. We trace onward, and find Mr. Percival with a lengthened article upon this affection. This author prefers the term "laminitis" to that of acute founder; but, in a note at foot of page 391 of his 'Hippopathology,' he quotes Professor Vatel, who calls the disease *podophyllitis*, a better name for it, probably, than "laminitis." Mr. Percival also makes some observations to the effect that the disease is not confined to the horse. "Mr. Ball, of Launceston, and Mr. Gregory, of Bideford, speak of having seen the disease in the feet of the ox tribe." I also have witnessed several cases of acute laminitis in the *bovine race*. I know no reason for their non-susceptibility, although I am free to confess their liability is much less than in the *solipede*. Many reasons can be assigned to explain why the ox tribe are so little affected with this disease. First. They are not often shod (this (shoeing) is, I have no doubt, one cause, when improperly performed; indeed, I have seen many instances of it being so). Secondly. When bullocks or cows are driven to fairs and markets the pace they travel is that of a walk, which is not accompanied with concussion. Thirdly. The hoofs being divided, there is more elasticity or pliability than in the solipede; further, they never have weight imposed upon their backs; and lastly, they live more in a state of nature than do horses. Mr. Percival observes, among the causes assigned for laminitis attacking the fore feet in preference to the hind ones, is that of the "larger portion of the burthen they have to support, &c." My idea is, that the front feet are more grievously affected than those posteriorly placed owing to the perpendicular position of the joints; there cannot be the same amount of concussion imposed upon the hind feet as is known to take place in the front ones, for the reason explained in my paper on navicular disease, in the March number of the *Veterinarian*, page 157, in the year 1865. I think the same cause is in operation in producing laminitis in the fore feet, as is experienced in the production of naviculararthritis. In fine, there cannot be the same amount of concussion in the hind as there is in the fore feet. Mr. Percival alludes to the breed of horses. His observations tend to the belief that coarse-bred horses, with flat feet, are more subject to the disease than higher-bred animals. D'Arboval, on the contrary, asserts that the narrow foot, clothed with a hard, compact hoof, is the most sus-

ceptible. Girard is of the same opinion as Mr. Percival. My practice being chiefly among the light breed of horses, it cannot be supposed my experience has been great as regards the coarse-bred horse. I have, however, seen sufficient to prove that Mr. Percival is justified in making the statement. What pace will do, in the lighter-bred horse to produce disease: weight of the animal himself, and the immense loads he draws, will in the heavy; besides, the horn and the soft parts are not composed of that tough material as we find in the thorough-bred horse, or, to make myself better understood, perhaps, I would say the foot of the heavy horse is not calculated to stand the same amount of wear and tear as that of the well-bred horse is known to do.

There being three kinds of disease known under the name of laminitis, it becomes necessary that we understand each other as to which of the three is meant when speaking of it. There can be but one opinion as to the difference met with in a flat and in an upright foot, as regards the growth of its horny fibres. It must be admitted that the more upright the front foot is, the stronger it is, and the more flat a foot is known to be the weaker are the horny fibres. In the latter feet *acute* laminitis, according to my experience, is the more frequent. I have seen some thousands of upright feet, and they were generally of a higher temperature than healthy feet are supposed to be. I take it, we do not sufficiently consider the fact that some horses have almost at all times warm feet, and that there are also horses whose feet are generally cold. This is a common thing in the human family. I don't think a warm foot should be condemned, unless there are circumstances which would lead an examiner as to soundness to infer that he conceived the increased heat of the part interfered with the action of the animal. If he thought the limbs were not doing their duty, as the shape and form of the animal warranted their doing, then he might look suspiciously at the warm feet of his patient. As to the disease we are discussing not coming on suddenly, as many believe, the same remark may with truth be made of other complaints *supposed* to come on suddenly.

"Metastasis," or inflammation from the lungs to the feet (Mr. Percival observes), after inflammation in the former has happened to be severe, and is becoming protracted, is a mode in which laminitis occasionally takes its rise. The inflammation is then said "to fall from the lungs down into the feet," though it oftener happens that the inflammation "falls into the joints, producing rheumatic lameness." As soon as the metastasis has taken place, the lungs become relieved through

it; nor is the fever that has "fallen" into the feet of so violent and unmanageable character as is idiopathic laminitis."

Professor Spooner, in his lectures, speaks as follows:—"In this disease there is much fever in the feet; the sole partakes of the inflammation. The malady is more especially confined to the laminæ. It is referrible to over-exertion of the laminæ. It arises also from metastasis, from inflammation of the lungs. A horse may be very ill to-day with inflamed lungs; to-morrow the symptoms are abated, and it is found that his feet are diseased. He is found walking on his heels." Again, amongst the causes enumerated by the professor, he says:—"The standing position is more likely to produce the disease than any other, as it is necessary that exercise should be adopted to keep up the proper and natural circulation of blood through those parts." He was then alluding to horses on shipboard. His treatment is pretty much the same as that recommended by other modern veterinarians. He *deprecates bleeding in the foot.* The professor states the shoes must be taken off, if possible. The late Professor Sewell used to say, "keep them on." The professor will pardon me for quoting him. I may not have done so in his own words, because I have only my own notes to refer to, which I took when at college. Mr. Greaves has made some very valuable observations upon laminitis; they afford the student, young as well as old, ample food for thought.

Mr. Gamgee, sen., has also made this subject his study; his remarks, to be found in some of the numbers of the *Edinburgh Veterinary Review,* are evidences of deep research. He relates a most rational mode of treatment; indeed, there does not appear to be any difference in his advice and that of Professor Spooner's. I think I have somewhere said that a hundred doctors will have as many modes of cure. In reviewing the various modes of treatment I don't know that I need allude to that advocated by Markham. It is at once the most absurd and most cruel that could be devised. Were I to know his practice being carried out by a man in the present day, I should turn common informer immediately. Youatt and Blaine have both done good service in bringing into use a rational mode of practising medicine. Percival has, I have no hesitation in saying, done more towards the advancement of the veterinary art than any other writer in the English language. He refers to the introduction of setons in the frog, as advocated by the late Mr. Gabriel, a practice I never attempted, except in chronic cases. I should not like to adopt it in acute

disease of the laminæ. Some writers recommend bleeding in the toe for laminitis.

There are many objections to bleeding at the toe in this complaint. In the first place it is almost impossible to do so, if all four feet are implicated; and in the next place the time required would be so much time lost. These are two grave objections, and there is another, viz., suppuration of the softer parts, and frequently a separation of the horny covering of the sole some days afterwards. If I did not choose to use the lancet I would prefer general bloodletting. There is one great advantage in the lancet when applied to the coronary veins—you require no farrier to assist and annoy you.

All seem to agree in the use of laxatives. The bowels should be emptied as soon as possible, there can be no manner of doubt. In these "Observations on Soundness" it may have been noticed that I have avoided entering upon the treatment of disease; but as the affection I am now writing upon is of so important a character, and so much depends upon the first few hours' treatment, I cannot allow the present paper to go from me without advancing some views which I have entertained for some years, and the success which has attended the practice. We will premise we all agree as to the increased temperature of the feet in laminitis; I don't care whether it be called "acute founder," "laminitis," "podophyllitis," "rheumatism," or "fever;" it is all the same. The veterinary practitioner has a fire to get rid of, and if not done speedily the fabric will be ruined. There are many ways, doubtless, by which an end can be attained; and it may not, perhaps, be of much moment as to the manner it is acquired, still there are easy methods sometimes of accomplishing a task which have by others been considered almost unattainable. One man will advocate one mode, a second another, and so on. Each one has, no doubt, found his own good, and he would rather know it was imitated by his brothers than to fancy it was cast aside. This is human nature. It may well be asked, What is laminitis? To this simple question it may be answered as simply, viz., there is *too much heat in the foot*. Again, how are we to remove it? Ay, there is the rub! Markham tells us to bleed, charge the back and loins, and to garter the leg, and, as a last and only thing he depends mainly upon is, *lots of walking exercise*.

Most modern veterinarians advise bleeding, physic, poultices, and rest. One mentions that the neck vein should be opened, another that of the arm, a third of the pastern, a fourth of the coronet, a fifth of the toe, &c.; one man says keep the shoes

on, another tells you to take them off. Some of these directions are perplexing. Some veterinarians advocate the system of casting a horse, and placing fetters upon him when down; others as strongly recommend slings. If I relate one case it will suffice to make your readers acquainted with the practice I always adopt in acute cases of laminitis. A few years ago a lady called upon me, to ask if I had any objection to see a horse which was very ill, and was attended by another veterinary surgeon. I replied I had none. Having understood from the lady that the horse was very ill, I armed myself with a few bottles containing drugs suitable for an ordinary attack of any internal structure. When I arrived at the stable of the patient (two miles from my home), I found the owner and two grooms looking sad.

The owner accosted me thus:—"I want you merely to give me your opinion upon the case. Mr. So-and-so has been attending him for some days; he at last said he could do no more for him, that his life was not worth a halfpenny, and that he himself was going away to a great distance on business. The horse has up to this time been regularly attended to, and treated for some internal disease, the character of which was not understood."

The above words are the substance of what was said. The gentleman was, moreover, very particular in stating that he didn't wish me to do anything. After a careful examination of the case—which, by the way, did not require much discrimination—I informed him that there were no symptoms of internal disease, but that the feet (all four) were highly inflamed. When I had delivered myself of these words I turned about with the intention of walking out of the box. He called and said, "You had better take the horse under treatment." I replied I understood that nothing more than an opinion was required. He desired me to take the case in hand if I had no objection.

The other "vet." having abandoned the case, and the horse being a great favorite, without hesitation I undertook it. Being only prepared with medicine for disease of some vital organ, I begged to be allowed to go home and fetch my foreman-farrier, as the shoes must be removed before anything more was done. The owner interrogated me as to the probability of cure. Turning round to his groom, I said, pointing to him, "That man will cure your horse!" The owner and his lady looked at me, not knowing what was meant. I explained to them the nature of the complaint, and the treatment to be adopted. They were told the horse required no medicine; it was withheld for obvious reasons, viz., had drugs been administered internally, the "vet." who aban-

doned the case would have declared that the disease was internally situated, and that the attention paid to the feet was a subterfuge. The shoes were removed with much difficulty, and the coronary veins opened with a lancet in all four feet, whence issued copious streams of blood. Some soft straw was put into the box, which had a smooth brick floor. The man in charge was directed to apply hot water to the feet for twenty-four hours at least, night and day; in short, the horse not to be left an hour. The owner very properly said my instructions should be carried out to the letter; and his servant, although somewhat astounded at the order given, promised to do all in his power to carry them out.

The next day I saw the patient, and thought it well to renew the orders of the previous day, substituting another nurse, as the first man was rather jaded. The hot water was continued for forty-eight hours. The feet were relieved, the horse lay down, and from that day recovery was rapid; in less than three weeks the owner was riding him about the town, nothing the worse for the acute attack of laminitis.

A similar case occurred a short time ago. The only difference was, that I saw the animal a few hours after he was attacked, and was summoned to attend him, as he *could not stale;* this was the supposed disease. I found the front feet were attacked, and the treatment pursued was precisely what I have related before. If it were necessary, I could add a long list of cases to these.

This, then, is my mode of practice, so far as the feet are concerned. I take care to starve the horse so long as the fever continues, administer laxatives always, and enemata when considered requisite. The principal aim in the treatment of these cases is, first, to take the patient into a large loose box, making sure the floor is level, and made perfectly soft with a plentiful supply of used litter; secondly, to remove the shoes; thirdly, to administer laxatives, and a purge if you like, as well as an enema; and, fourthly, to open the coronary veins, and apply hot fomentations incessantly, night as well as day. Give nothing to eat but slops, but allow plenty of chilled water. The patient should be kept moderately warm with clothing, as the bathing is calculated to cause him to feel chilly. He should be allowed to lie down; the sooner he does this the better, and he should be encouraged to remain down. In the course of from forty-eight hours to three days, the patient will, under ordinary circumstances, be found convalescent. Don't bleed at the toes; have as little to do with the feet, in

knocking them about, as possible; don't seton, nor blister; don't sling either. These few simple directions are all that are required as a general rule in the treatment of acute laminitis. Remember you have a fire to put out; the sooner your remedies are applied, and the more incessantly employed, the sooner the fire will be extinguished, and with the smallest amount of damage to the internal parts. If the acute symptoms are not removed speedily, the consequences are sometimes disastrous, and alterations of structure will take place which we have but little control over. This affection sometimes remain a long time in a subacute form (I don't mean what is known by chronic disease), but simply inflammation continuously present, of a not altogether inactive kind. The best example of this kind I met with some time ago. I was called to see a cart horse, said to be lame in the *near hock*. He had been treated by a practitioner for hock lameness some few months previously. I examined the limb, and was of opinion the disease resided in the foot. After pointing out what I considered the disease was, directions were given and carried out. The usual routine of practice was resorted to, but with little hope of success. Bony matter was thrown out upon the pedal bone, the coronal and pastern bones: the leg became flexed, the horse walked upon his toe, and the heels ascended some inches. No doubt some persons would have performed the operation of "tenotomy;" but the case appeared so clear, and I did not feel desirous of inflicting pain, trouble, and expense, with so small a hope of benefit. The animal worked for some months, and at length I advised the owner not to run any further risk of coming within the "*Cruelties' Act.*" He sent him to the kennel, and I have the bones before named, perfectly clean, and placed in my sanctum. It would appear that the entire of the os pedis was highly inflamed, small spiculæ were thrown out laterally, anteriorly and inferiorly. Nearly the whole of the lower portion (save where the tendon was attached) is covered with large holes, as if absorption of the bone had been going on for some time. It contrasts with another which I casually found at the kennel; this has bony matter substituted for one of the cartilages, it measures two inches above the bone. The bone itself is considerably changed; the arch is gone, and the *toe* turned upward. The heel of the bone, immediately under the ossified cartilage, has half an inch of ossific deposit. The other heel has a small portion of ossific matter also. These are two of the best specimens I have seen. I should have said, the coronet shows marks of disease (in my patient referred to above), and so does the os suffraginis: on

both sides of the latter bone, much ossific matter has been deposited, and the bone is considerably changed in its colour, evidencing *bony* inflammation. In subacute and chronic laminitis we must be prepared for anything which may occur. It is a matter of uncertainty whether the laminæ, the cartilages, or the bones, become structurally diseased, giving rise to *hoof-bound*, as the farriers term it—ossified cartilage, ossified bone, if I may use the term—pommice and contracted feet, loss of hoof, seedy toe, and so on. The veterinary surgeon has much cause for alarm, if he happens to see the case in its *acute* stage, and any of these results follow his treatment. If, on the contrary, he is instructed for the first time to see a case in the subacute or chronic stage, his fears should be allayed by giving that information to his client which will at once absolve him from blame. Professor Spooner lays great stress upon the removal of shoes. I make it a rule to remove shoes in every case of acute disease, where practicable. Some owners object to this. A gentleman some time ago begged me to see his horse, and give an opinion as to the nature of the disease from which he suffered, and likewise the treatment to be pursued. I replied, that the shoes should first be removed, the feet being exceedingly cold, to which he flatly objected. I removed my hat, and bade him "good morning." I never would undertake the treatment of a patient, if interfered with by the owner or his servant. My motto has been, and will be: "*I must have all the treatment of the case, or none.*"

(*To be continued.*)

THE ANNUAL MEETING OF 1866.

By R. H. Dyer, M.R.C.V.S., Torquay.

Gentlemen,—The great annual meeting is among the past; a meeting which has always been looked forward to with much interest by those in the habit of assisting at it.

We are not likely to have a retrospective "Bill," but I do not see any just cause or impediment why we may not take a retrospective glance at the events of the past twenty-two years. In doing this I trust you will bear with me should I occupy ground which has before been trodden upon. In the year 1844 a Charter was granted, which had the effect of con-

stituting those persons designated "veterinary surgeons" a professional body. It was believed that that Charter of Incorporation would exert a powerful influence over the sayings and doings of every owner of a College diploma. Before the obtaining of the Charter veterinary surgeons were usually looked upon as a class of men who possessed but a slight acquaintance of the art they proposed to practise, and to be generally known as "farriers."

After the obtainment of the Charter they were raised to a profession, having a body and a head, and consequently became complete, with a motto of great significance—"Vis unita fortior."

Now, let us see what advantage this Royal Charter has been to the profession. We need travel no further back than the past ten months, because the Charter, up to the present time, has been a dead letter. A Bill has been drafted, with a view of enforcing the terms of the Charter of 1844. If a Bill be required to carry out the terms of the Charter, what was the use of the Charter? I have always understood that an Act of Parliament gave certain powers to authorities to carry out its provisions. In this instance the contrary is the fact. What is the nature of the Bill about which so much has been said?

In the "reasons" for a Veterinary Medical Act it is stated that—"*The object of the proposed Veterinary Medical Bill is to protect the public and the profession from the deception of persons falsely calling themselves veterinary surgeons.*"

Again, "*It is not, however, intended to make the Veterinary Medical Act retrospective in its provisions, nor to prevent any one of those who have falsely assumed the name and profession of veterinary surgeons from continuing to practise and to call themselves as such.*" Further on, "*It will still be left open to any one who can get practice to pursue his calling under whatever title he chooses, providing only that it does not involve the false representation that he is a duly educated and admitted member of the veterinary profession.*"

Really these conditions are extraordinary.

In the first place, it is asserted that the object of the Bill is to protect the public and the profession from deception, falsity, &c. And, in the face of all this, it permits all those who have used false representation to continue to do so for the remainder of their lives. I never read a more inconsistent piece of English than the above. We are told that the public and the profession must be protected, &c.; and we are at the same time aware of the

fact of between 4000 and 5000 unqualified men practising deception in Great Britain at the present moment.

The "reasons," and some of the clauses of the Bill, are made up of such inconsistencies, that I begin to think it were better for the profession at large to abandon the Bill altogether. It does not appear to me that heads of departments really are aware of what they are about.

The fourth clause of the Bill, as originally sent out, was thus: "*Provided, nevertheless, that this Act shall not affect any person who shall, prior to the* 1st *day of October,* 1866, *have assumed the name or title of veterinary surgeon, and at that period last mentioned shall be actually in practice as such.*"

This clause caused much dissatisfaction amongst the members of the body corporate, and loud were the outcries in reference to it. Resolutions were passed at some of the veterinary medical associations, condemning the fourth clause in unmeasured terms, and proposing amendments. Circular letters were forwarded to practitioners, asking the opinions they entertained of the fourth clause, &c. We were told at our annual meeting that some 300 replies were received. I am not clear as to the number of replies. Much opposition was made to the fourth clause, in consequence of which another Bill was framed, which I presume is the one which was laid upon the table at the Council meeting, which says—"*Provided, nevertheless, that this Act shall not affect any person who shall have assumed the name or title of veterinary surgeon prior to the obtainment of the Charter of the Royal College of Veterinary Surgeons.*"

Before I proceed further, I will direct your attention to the advertisement in the *Veterinarian*, viz., "After the annual general meeting a discussion will take place upon the subject of the Veterinary Medical Bill, and an application to both Houses of Parliament." Upon the faith of this advertisement I was induced to make arrangements for a journey of some 200 miles and more. We will now see how the terms of this advertisement have been carried out.

In the first place, on reading the abstract of the report, we learned that the "reasons" are therein contained, and the Bill, *in extenso,* as amended.

The President occupies the chair appropriated for him, the Members of Council surround the table, and some seventy or eighty members or more of the profession take their seats, all anxious to hear what had been going on in the Council chamber of the Royal College of Veterinary Surgeons during the year 1865-6.

The much respected Secretary proceeds to read the report, which is in the hands of every person present, and, when terminated, a member of the profession rises to propose that the report be referred back to the Council, that their proceedings are most irregular, that the discussion which has been advertised, and for which a large number present left their homes to take part in, could not take place, as advertised. Several gentlemen attempted to explain. It seemed that the only course open for adoption was to discuss the Bill at that time; in fact, as a "part of the report." I confess I was greatly puzzled to learn what was the true nature of the remarks which fell from the different speakers; and it was evident that there was a desire to terminate the discussion as speedily as possible. And so the report was adopted, which effectually shut the mouths of any person who felt a disposition to take part in the discussion of so important a measure as a "Veterinary Act." As we had not the opportunity of making a remark at the meeting in Red Lion Square, I am proud to think we can do so in another place—through the pages of the *Veterinarian*. Members of the body corporate ought to consider this a great privilege granted to them by the editors. We were told that the fourth clause, as found in the report, was not the clause which was to be found in the Bill. It appears the Bill is in the hands of Members of Parliament, and that the fourth clause—the amended one—would not pass; so that the framers of the Bill fell back upon the original, owing to that Bill being non-retrospective. What benefits are likely to accrue to our body when the Bill is passed into law? One thing is certain. Thousands of men practising the art of veterinary medicine, who have not thought it worth their while to assume the title of veteriuary surgeon may then assume that title as a legal right. They will become, so far as a legal title is concerned, a veterinary surgeon in the true sense of the word. Some men have already had that title posted. One thing, however, is consolatory, they are the same men still. I am glad to say the public will not be gulled into the belief that, because these pretenders are permitted by the law, as it stands, to use a name, that their knowledge increases immediately. It will be difficult for them to make the most ignorant person believe that he has a better position than formerly.

It has been stated that this was the only means by which an Act of Parliament could be granted. The Act will not improve the position of any member of the corporation for the next twenty years. An idea occurs to me that a clause

could have been inserted in the Bill which would have met the case on all points, and, at the same time, would not have interfered with the liberty of the subject. Something such as this would have answered the purpose:—"*No person without a diploma can use the name or title of veterinary surgeon, but all such shall be designated 'veterinary practitioners.'*" It will be urged by those possessing the certificate of the Highland Society, that a wrong would be inflicted upon a very respectable, and, in many cases, a clever class of practitioners; for it cannot be denied that many of those persons holding the late Professor Dick's certificate are thought well of, not only by the public, but by the profession; and it is patent to all who know anything of the army, that many of them hold commissions in the service. To provide for these gentlemen they should be invited to undergo a formal examination for the diploma, and pay a fee to the College.

The examination should be thus—

What is your name? Have you studied at the late Professor Dick's school, and obtained, after due examination, the certificate of the Highland Society? Do you wish to obtain the diploma of the Royal College of Veterinary Surgeons? Are you willing to pay the sum of £— in order to obtain that diploma? These several questions, and any other deemed requisite to put to the candidates, are sufficient for the purpose. In this way provision would be made for those gentlemen who are at the present time in an anomalous position.

The Bill, as it now stands, provides for those who are in being in the next generation only.

The proceedings in Red Lion Square were a complete muddle! If, as was discovered at the moment, a difficulty had arisen, some member of the Council should have immediately explained to the meeting the position they were in, and endeavoured to wipe out the stain which has been left there. I incline to the opinion we are all entitled to our travelling charges from the funds of the Royal College of Veterinary Surgeons. Some explanation is due to those members who were present upon the above occasion; or, it is more than probable, when the next anniversary is announced, that some members of the profession residing hundreds of miles from the metropolis will feel disposed to place the right thumb upon the point of the nasal organ, and extend their fingers anteriorly.

Well, the great annual is over, and we must prepare for the banquet. Fifty gentlemen took their seats at the London

Hotel, after depositing their guineas with the clerk in the lobby.

It may not be out of place to enquire, if we were better provided for at the festive board than we were in Red Lion Square. I think not? Would any person believe, that out of a hundred or more metropolitan practitioners, in full practice, there were but *six* at the table upon that occasion? I counted *twelve* heads, after the London practitioners' toast had been drunk, out of which, six were teachers in the schools. Is this to be considered a compliment to us "country bumpkins" (for that is the English of the terms used towards us by many of those residing in the metropolis)? What can be asserted as a reason for so few London men putting in an appearance? Surely there must be a cause for this seeming indifference on the part of those residing in the metropolis of England. Is it possible to hold these anniversaries in the provinces? If it is, the sooner they are *un*associated with London the better.

In taking my leave of this subject, I trust that the Bill will be laid on the table of the House of Commons, to be read this day six *years*, when it is more than probable we shall hear no more of it.

I have always been of opinion, that the British Parliament are not disposed to do anything to help us. Let us help ourselves. Let each veterinary medical association publish a periodical list of qualified men in its neighbourhood, which will have the effect of making known to the public the names of those who are not qualified (their names cannot be mentioned, of course, it would be illegal to do so).

I may take the present opportunity of stating, that I think the "associations" are calculated to improve the status of the members of our profession much more effectually than any measure which may be brought into Parliament. Remember what the late Daniel O'Connell used to say: "He could drive a coach and four through every Act of Parliament that was ever made."

Yours, &c.

To the Editors of 'The Veterinarian.'

CASES OF INVERSION OF THE MUCOUS MEMBRANE OF THE RECTUM.

By T. W. Gowing, M.R.C.V.S.

In referring to some memoranda of cases, I find that I had a chestnut horse sent to me which I had castrated some three months previously, and upon examination I ascertained he was suffering from inversion of the mucous membrane of the rectum to a considerable extent. After making several attempts to reduce it, that I found ineffectual from the enlarged condition of the parts from serous deposit, I came to the determination of casting the horse, and dissecting off the mucous membrane from its connecting medium of attachment. After the operation I had no difficulty in returning the intestine. The horse was ordered a restricted diet, and ultimately returned to work quite recovered.

A short time since, a practitioner and friend was relating to me a similar case. He stated he had not met with one like it before. I recommended him to operate and remove the parts, as I had done in the case related as above. This also was a satisfactory case. From a repetition of these cases, I find they are not uncommon, as I was consulted again on the 6th April last, with regard to a big heavy draught horse, a black gelding nearly seventeen hands high, belonging to Mr. Birch, of the Steam Saw Mills, Albany Street. He was used for the purpose of removing timber. The man had him out in the timber carriage at Westminster, on the morning of the same date, and observed that he was constantly straining, and found that there was a large protruded mass from the anus. He deemed it necessary to remove the horse from the timber carriage, and at once bring him home. Between ten and eleven in the morning of the same day, my assistant saw him and made an attempt to return the part, but the animal's forcing and straining was so great, he was obliged to desist. He returned home, and asked me to see the horse. Upon my arrival, I found an inversion of a large portion of the mucous membrane of the rectum through the sphincter ani, about seven and a half or eight inches in diameter, very much thickened with serous deposit, and cold from exposure, having been protruded some hours. The horse was constantly straining, but otherwise seemed in health. I saw at

once that any attempt to return it must prove ineffectual; therefore, I made up my mind to deal summarily with the case, and as he was a big heavy horse, I wished to dispense with casting if possible, and also avoid the tedious operation of dissection. Reflecting on my previous cases, I had him secured by a twitch, and the fore leg held up by an assistant, when I made four or five free incisions through the protruded mucous membrane, an inch and a half to two inches in length. Although these free incisions were made, there was little or no escape of serum, as it remained intact in a jelly-like form. Finding this the case, I inserted my finger into the incisions I had made, manipulating and breaking down the connecting tissue. I also commenced pressing the parts, and succeeded finally in reducing their size; and as there was now a free discharge of fluid from the incisions, I was enabled readily to return the protruded membrane, having first smeared it over with a little oil. At intervals there was a great amount of straining. A temporary compress was applied by the means of a pad, and the sphincter muscle contracted freely. I simply ordered the pad to be held against the anal opening by a stableman; and when he was tired, another to take his place. The horse was ordered oatmeal and water *ad libitum,* and restricted from all hard food. He was seen by me again in two or three hours, when the pad was removed. There was a discharge of fluid from the anus, and while I was there he voided some fæces. At this time, the operated parts again protruded, but so much reduced and contracted that they passed back again with the efforts of the animal. There was discharge from the anus for a day or two, but I observed no sloughing. I saw him on the following day, the case seemed to be going on satisfactorily. I ordered him to be fed with mash diet and oatmeal mixed, also to have oatmeal in his water, and as much pure water as he would take. His health seemed good, therefore no other treatment was carried out. In the course of a short time he again resumed his work. If you consider this case with the remarks worth a page of the *Veterinarian* I shall feel favoured by their insertion.

CASES OF ABSCESS IN THE LUNGS AND FRACTURE OF THE ILIUM.

By Thomas Walley.

Upon looking over my books several cases have met my eye which occurred in my practice at Welshpool, which I thought might be of interest and, perhaps, utility to my professional brethren and not unworthy of a place in your journal.

The cases I have considered of interest are as follows:

1.—*Abscess in the Lungs of a Horse* (*Recovery*).

The animal was a powerful brown horse of the cart breed, five years old, the property of — Hilton, Esq., Glyn-Hirieth, near Llanfair.

On the 17th April, 1865, Mr. Bateson, the agent of Mr. Hilton, called upon me and requested me to let him have some medicine for a horse with a sore throat, which I did, as also some liniment. On the 21st I received a hasty summons to proceed to Glyn-Hirieth, which was eleven miles away, as quickly as possible, as the horse had been suddenly taken much worse. Thinking it probable that an abscess had formed and was obstructing the breathing, I took my tracheotomy tube with me. The symptoms were as follows:—To an ordinary observer the bodily appearance was one of perfect health, the horse being in blooming condition, and having an almost ravenous appetite; but the breathing was that of extreme dyspnœa, it being so loud, accompanied by a whistling sound in inspiration that I could hear him at thirty or forty yards' distance. The pulse was nearly normal, or if anything a little full; the mucous membranes but slightly injected, and little, or no indications of fever present; the throat was not particularly sore or swollen, neither was there any difficulty in deglutition. The agent informed me that the throat had been much swollen a day or two previously, and that they had reduced it by poultices and fomentations; but he still believed that the cause of mischief was in the throat. Upon auscultation I found the abnormal sounds proceeded

from the chest, and I thought it probable they may have been produced by bands of lymph across the trachea or the bronchial tubes. He coughed frequently and violently, nearly falling over in doing so.

Treatment.—Administer a gentle laxative, and, night and morning, a powder composed of extract of belladonna, powdered ipecacuanha, camphor, each one drachm, and nitrate potash two drachms, to be scattered on his tongue; apply a strong blister to the bosom and side of the chest. The question whether I should perform tracheotomy or not then arose in my mind, and ultimately, considering the distance the horse was from me, and partly as an aid to my diagnosis, I determined upon doing it. With a good deal of difficulty, owing to the opposition the animal showed to having his head raised, I did it, but it produced little alleviation of the symptoms; however, I left the tube in. *Diet*, mashes and grass.

I left directions for them to send a message on the next day as to how he was, and promised to see him on the 23rd, but the severe illness of a near relative necessitated my absence from home for a day or two, and a friend of mine who was doing my practice whilst away mistook a message I gave him, and the horse was not seen again until the evening of the 24th, when I found him much in the same condition as on the 21st, with the exception of the breathing being rather worse, and each time he attempted to cough, a quantity of pus and mucus was ejected through the tube, which I thought probable may have come from the trachea.

The wound in the trachea was attended to, and the treatment continued as before, with strict injunctions to keep the tube perfectly clear.

26th I received a hasty summons early in the morning to go as quickly as possible, as the horse was worse, and upon my arrival found that when the carter had gone to him about five o'clock he found him down and dying, as he thought, and he immediately despatched a messenger for Mr. Bateson, who saw at once what was the cause of it; the tube had become completely stopped, and on removing it about a quart of healthy pus made its escape, which of course gave immediate relief. The case was now clear enough—one of abscess in the lungs, communicating with the large bronchial passages.

The treatment was continued as before, with urgent directions to keep the tube open.

From this time to the 4th of May he gradually improved, and the amount of discharge was much lessened. But on

that day there was a return of the former symptoms, and I now came to the conclusion that the sac of the old abscess had been filled again, or a fresh abscess had formed, and having no one in the neighbourhood to advise with, I determined to keep up the animal's strength with sulphate of iron and vegetable tonics, and to write to Professor Varnell for his advice; at the same time, at the request of Mr. B—, I inserted a rowel in the inferior part of the chest. Professor Varnell kindly wrote me to say that from the description he considered it a case of abscess in the lungs, and advised me to keep up the animal's strength and await the issue.

The animal now rapidly recovered, the treatment being continued to the end of about a fortnight, when the tube was removed and the wound allowed to close.

The last time I saw my patient was on the 16th of June, when he looked as well as any horse in the stud, but he had still a cough, and a little wheezing noise was heard when he was made to undergo violent exertion; this I considered due to a little thickening of the trachea where the tube had been inserted, and I sent him a strong blister to rub round the parts.

I doubt not many will blame me for having inserted the tracheotomy tube, but I thought its presence could be productive of little harm, and fortunately in this case it was the means of a great deal of good.

2.—*Transverse Fracture of the Neck of the Ilium; recovery.*

The subject of this case was a well-bred bay mare, about seven years old, in good hunting condition, the property of Mr. A. Williams, Trwst-Llewelyn, W. Montgomery. My attention was first directed to her on the 19th of January, 1864, when I received the following history:—

About a week previous (the weather being somewhat frosty) the groom was exercising her, and when about half a mile from home she slipped suddenly and went lame afterwards, but in a day or two, this having apparently disappeared, she was again exercised, and this time returned lamer than before. The owner, thinking this would pass off as it had done previously, did not take much notice of it, but finding that it did not improve he requested me to attend her. Upon examination I found that she was very lame on the off hind leg, but she stood well on it, and when at rest there did not appear to be much the matter, with the exception of the near leg being much swollen, and there was slight tumefaction of the off haunch. I then directed the groom to abduct, extend, and flex the leg whilst I kept my hands on

the parts, when I fancied I heard a slight crepitus, but not sufficient to justify me in saying there was a decided fracture.

Treatment.—Administer a dose of laxative and diuretic medicine, keep the animal as quiet as possible, foment the parts well with hot water, and apply night and morning some stimulating liniment. The case went on without any variation to the 23rd, when an attack of inflammation of the lungs supervened, and upon moving the leg a distinct noise was heard as of the broken ends of a bone rubbing against each other; and, indeed, every time the mare moved it could be heard, and unfortunately she gave a sudden start upon hearing the slightest noise or movement. I at once diagnosed it as a case of transverse fracture of the neck of the ilium (an examination per rectum did not aid much in the diagnosis), and as the mare was a valuable one, especially for breeding purposes, I advised the owner to give her a trial, but expressed a doubt that her extreme nervous temperament would prevent the parts uniting. She was removed to a loose box, and ordered to be kept as quiet as possible. The affection of the lungs was attended to, and in a few days it had entirely passed off. On account of the liniment having acted rather strongly upon the skin I could neither blister nor apply a plaister to the part until the 28th, when I put on a blister all round it.

From this time little else was done to her, except keeping her as quiet as possible, and after a run out to grass she was put to work again, but she was lame at times, though not sufficient to prevent her working, and in the following October she underwent a heavy week's drill with the Montgomeryshire Yeomanry Cavalry, with very little inconvenience to herself. The last time I saw her was in November of the same year, leaping a five-barred gate with a heavy weight on her back at a stag-hunt.

3.—*Transverse Rupture of the Superior Portion of the Neck of the Uterus in a Heifer.*

This animal was a very fine three-years'-old heifer of the short-horn breed, first calf. About one o'clock on the morning of the 15th January, 1864, my attendance was requested at the house of Mr. T. Woof, The Garr, near Welshpool, the messenger stating that they had a cow that could not calve.

On my arrival I found that the animal had been trying to get rid of her fœtus for some time, which operation had not been much facilitated by the gratuitous aid of a neighbouring farmer. Examination revealed a contracted passage and not a very moist one; the head of the calf turned back, fore

legs protruding, and what was worse, the bowels of the heifer wrapped round the body of the calf, of which fact I had some difficulty in making the owner believe, even after drawing out the bowels and showing them to him in the vagina. I at once told him that there was a rupture of the uterus, and that it was useless to torture the animal to get the fœtus away; however, he desired me to do my best for her. With hard work, owing to the contraction of the passage, I succeeded in removing both fore legs in the shoulder, and then by dint of pulling the remainder of the calf.

I administered a strong stimulant with a laxative, and directed them to give her plenty of stimulants for the rest of the night, and promised to see her in the morning, which I did, and found that she was dead.

Post-mortem examination revealed a rupture at the superior portion of the neck of the uterus about ten or eleven inches long, which had, as shown by the cicatrization of its edges, been produced some time previously, and extending from this on either side was a rupture of nearly three fourths of the body of the uterus, which had been caused in the extraction of the calf.

Upon making inquiries I discovered that the animal had, a fortnight previous, shown symptoms of constipation of the bowels, and had been frequently observed to twist her tail and hinder parts as if in pain; also, that some month or two before that she had been rolled over into a ditch, at which time, doubtless, the first rupture occurred.

As a sequel to this I may mention another case to which I was called on the 29th May, 1865, at Llanerfel, about sixteen miles from Welshpool. The subject was an old Welsh cow, and she, poor beast, had been in parturition for two days, and I found that upwards of about twenty would-be clever, know-everything sort of men, had been trying their "*sperience.*" As the owner was a poor man I told him I would make an effort to save her, and after about three or four hours' hard work I succeeded in removing the two fore legs and passing a strong rope round the neck, which was drawn at until the fœtus parted at the hips, leaving the hinder extremities and a portion of the vertebræ in the womb. I then inserted a small hook attached to a cord into the first vertebræ, which the Welshmen pulled at until (in spite of my shouting to them) they detached from its hold and hooked it into my thumb, which finished me, and I killed the poor brute to prevent any one torturing her any more.

VACCINATION, ET EQUUS MATERIA.

By Stephen Gibbs, Herne Bay.

Vaccination, or inoculation with cow matter, has been carried to a very great extent since Dr. Jenner discovered nature's cure or preventive for smallpox in the human being. Strangles in horses, scab and smallpox in sheep, distemper and rabies in dogs, and cattle plague, have had their trial. The reports are various; the virus acts upon the different species, but not with that happy result desired; it does not prevent or mitigate the disease; it is the action of cow matter, direct or indirect, in every case, and only answers in one, namely, the human. It has occurred to me, horse matter taken from strangles or specific phlegmonous inflammation of the cellular substance between the jaw. It is not entirely confined to the jaws, but several small ulcers appear on the lips and nose sometimes; from this, no doubt, Gibson compares it to smallpox, others to measles and chicken-pox. On referrring to the principle of vaccination in the human subject, to ensure success by inoculation in the bovine or ovine species, we must select the matter from quite a different species from that to be operated upon—of a stronger nature, with a disease of the same class and mild form. The so-called strangles in horses I believe to be something specific, and similar to the class exanthema or eruptive, quite as much as the cowpox in cattle, which also shows itself in one locality. The constitution of the horse struggles for a time to bring forward the disease, and until it is brought forward the patient is not himself. The disease is contagious, and possesses the properties of inoculation. In successful vaccination does one specific poison act upon and decompose the other; or, by instilling the nature of one animal into another that is proof against the disease, make the animal operated upon proof also? If so, the horse is proof against the rinderpest. It is also a well-established fact that all fevers in cattle run on to a typhoid state with a rapidity unknown in the horse; this idea I beg to lay before you for your and Professor Simonds' consideration, as I think it the proper *modus operandi*. Feeling you will give your attention to it, I hope to hear of experiments in cattle and sheep, and equisaction placed by the side of vaccination.

THE PROPOSED BILL.

By T. J. Poulton, M.R.C.V.S., Gravesend.

Looking calmly and dispassionately at the discussion which at the present moment is being carried on in the pages of the *Veterinarian*, and which is the *on dit* of veterinary topics, I have been induced to pen these few lines.

It must strike any one that the fourth clause is objectionable, and that in this fourth clause the claims of quackery and empiricism are to be appeased by liberal donatives. If they are able to attach V.S. to their signatures they must also do the same in our law courts, and they will be received there upon a perfect equality with ourselves. Surely every one who reads it must be impressed with the idea that ours is not the profession we should wish it to be, that we wish to hold out our hand to quackery, and that we shall feel grateful if Parliament will amalgamate that ignorant class of individuals with our own. I would ask, if this bill becomes law, what will be said of veterinary science, and what will be said of the class of persons who then will be associated with us? The law will then authorise them to usurp the title of veterinary surgeons, and we shall be called upon to consult with them as professional brethren. If we cannot get a better bill at the present moment, then let us rest upon our oars, and be thankful that we are the only ones, legally speaking, who are able to assume that title. But if there is a possibility, nay probability, of at the present moment attaining that desired end, call these individuals any name you like, but *never* veterinary surgeons. If you like, call them veterinary practitioners. We have obtained our charter, and in that charter we are expressly and of all others to be called veterinary surgeons. These individuals, however, have most of them set up their V.S. names in defiance of us, and whenever I see a board or plate with that assumed title, I consider that that man has both morally and legally committed forgery, and yet we are asked to wink at this and allow this bill to pass, that it may in future be a benefit to us. I would ask, do not some remember the transports of joy, which were loud and deep, upon the obtainment of our charter? Then the utopian dream was realised, and quackery was to be a thing of the past. But, alas for all earthly hopes, it was found that they were but built upon the sand, and the falsity of this elysian dream was quickly discernible.

If I am asked as to the mental qualities which these individuals as a rule possess, I would say that they are self-conceited, presumptuous, and overbearing; that, as a rule, they are given to drunkenness and every degrading vice of which the human breast is susceptible; that, instead of being a pillar of support, they will be to us only a broken reed.

In practice they bleed and physic in catarrh and influenza; they give aloetic purgatives in nephritis; and they lacerate, torture, and otherwise ill-use the animals which they treat, and for which humanity demands of them the kindest treatment. If they only knew half the delicate structures which had given or were giving way; if they only took into consideration the anguish of the dumb brutes, surely, in the common feelings of justice, reason, and humanity, they would forego their unnecessary torture. I remember hearing of a quack of this class who, when called upon to attend animals suffering from colic of any description, gave a draught which, *if it did not cure, nothing upon the face of the earth would*, which he rightly termed his *destructions*, and which, as a rule, failed in every instance. This was an ignorant individual who, when asked why in every instance his specific failed, the owners doubting his talents, said that he got his *destructions* from some individual whom he named, and who proved only as sapient as himself.

Another of this class was called in once to attend a favourite horse suffering from colic, the property of a clergyman, and after he had administered his specific was invited into the owner's study, when the owner asked how his favourite was getting on, to which he replied, after giving a quiet, knowing wink, "Well, sir, you see the animal is affected with what we in our profession call *semper idem* (always the same), that means, sir, *worse and worse!!!*" The next day he was again called into the study and the same inquiry made, to which the poor fellow, with a melancholy shake of the head, replied, "Well, sir, to tell you the truth, she is what we in our profession call *vivat rex*, which means, sir, *dead, by G—d.*"

If, then, such men as these are introduced into the profession, will they tend to raise our professional status? They will laugh at us, then, and tell us that we have been to much expense for nothing; that though we have toiled and obtained our diploma the acquisition of it is of no avail, as they are our equals.

With a deep love for my profession, in early childhood my aspiration was to belong to the same profession that Percivall,

Youatt, and Bracy Clark belonged; to be instructed by, and to understand the theories that Spooner, Simonds, and Varnell held; and now that I have obtained my diploma are these cherished dreams of my early childhood to be banished for ever from my thoughts? Are they to be only things of the past, of no moment, and too bright to be realised; or are they to be the practical lessons of to-day, when, in the summer of my manhood, they will produce abundance of lasting fruit?

Audi alteram partem. I see gentlemen scattered over the fair fields of England, bonnie Scotland, and lovely Erin's isle, who have obtained a diploma, although not identical with ours, have passed through an ordeal as searching and in every respect the same, although not authorised, as I have passed, and are as fit in every sense of the word to practise the veterinary art as I am. To these I would hold out the hand of fraternity, and in addition, say that if anything is to be done do full justice to them, and amalgamate them with us as M.R.C.V.S.'s. Then, and then only, will you heal the wounds which unkindness on both sides have inflicted, and you will receive gentlemen already educated, who will only be too pleased to assist to the utmost of their power the common interests of the then united profession. I need not say I allude to the Edinburgh men.

To empiricism I would say that there is, and ever will be, a royal road to science; the path which leads to it may, it is true, be narrow; the quicksands and whirlpools, it is true, may be numerous; but with the morning will come the dawn of light. Two sessions at one of our colleges, and the obtainment of a diploma, is all that is asked, and surely this is not much if you wish to be what you would make the people believe you are—a professional man.

By Robert Bryden, South Hetton.

Gentlemen,—What is to be done with the holders of the diploma granted by the Highland and Agricultural Society? has been a question much discussed, chiefly in its relation to the proposed Veterinary Medical Bill. That the existence of such a certificate is a prolific source of disunion in our profession is allowed by all; and though various remedies have been suggested, none seem to meet with general support. Some propose the possessors of this certificate should come forward and pass the customary examination; while others

would have them admitted to all the privileges of the "corporate body" without passing any examination at all. Whatever merit either of these plans may possess, neither strike at the root of the evil, as the number holding the Highland certificate receives a material increase year by year. I would therefore humbly suggest that the Council of the Royal College of Veterinary Surgeons appoint a deputation to wait on the Acting Committee of the Highland and Agricultural Society, and present a petition, praying that body to withhold their diploma altogether, as it tends to weaken and sever what ought to be a strong and united profession, and its possession confers the title of *veterinary surgeon*, to which, according to the charter, *none but members of the Royal College* have a legal right.

If this matter is properly explained, they will see that by granting the request they would be conferring a far greater benefit on the real interest of the veterinary profession than by persisting in their present course, and their consent will be all the more readily obtained now that Professor Dick is dead, and I am sure it would have the warm approval of a great majority of the members of that important society, for they, too, must know the force of our motto, "Vis unita fortior."

DEFENCE OF HOMŒOPATHY.

By J. P. Berry, M.R.C.V.S., Northampton.

Gentlemen,—As a statement made by me at the Halifax meeting of the "Yorkshire Veterinary Medical Association," in reference to the action of bichloride of mercury, was referred to by Mr. W. Williams, in his speech at the annual meeting of the Association at Leeds, may I be permitted to explain that I intended it to be understood from my remarks that where extensive deposition of osseous matter, as in ringbone, had taken place, I employ that remedy *externally* as well as *internally?*

As to the homœopathicity of the remedy, I maintain that there is a similarity of the pathological condition between previously healthy parts which have been subjected to the pathogenetic action of mercury, and that condition of the tissues in which hereditary predisposition is the primary cause; and in both cases the exciting cause may be necessary to produce the manifestations of disease and consequent deposition of osseous matter in the cartilages.

Homœopathists are guided in the selection of remedies by recognising the law expressed by the words *Similia similibus curantur;* the results in practice justify its adoption, and homœopathy is too securely based upon experience, from which there is no appeal, to be shaken by the downfall of any hypothesis.

The proper question is, not whether a theory be true or false, but to what extent will it harmonise and explain phenomena.

The struggle of the medical mind is for a rational union of theory and fact—of principles and phenomena.

I shall, with your permission, reply to Mr. William's remarks on the action of aconite on a future occasion.

I am, Sir, your obedient servant.

Facts and Observations.

The Active Principles of Darnel Grass.—Two poisonous substances are stated by MM. Baillat and Tilhol to exist in the darnel, differing considerably from each other both in their physical and their chemical properties. One is soluble in ether and insoluble in water, the other is opposite. That soluble in ether acts on the nervous system, something like strychnine; that soluble in water produces a stupefying effect, resembling the action of too much alcohol, followed by considerable prostration of the vital powers. Neither principle is volatile.

The Sting of Reptiles.—In a paper addressed to the Academy of Sciences, Dr. Guyon lays down the principle that the action of the venom of serpents as well as scorpions is identical on man as on beasts—a proposition he confirms by several observations of his made both in the West Indies and in Algeria. Regarding its violence, he says there is a general belief abroad that it is much more powerful in summer than in winter, but this he does not consider well authenticated, and quotes against it the case of one Drake, an exhibitor of snakes, who having in the winter of 1827, at Rouen, handled a rattlesnake which he took to be dead while it was only benumbed by the cold, was bitten by it and died in the course of nine hours. From a considerable number of observations Dr. Guyon concludes that the intensity of power of the venom is less owing to difference of season than to the length of time it has been accumulating in the reservoir of

the reptile, and the greatest accumulation necessarily occurs during winter, because the animal is in a torpid state, and does not take any food during that season. So it was in the case of Drake, and so Dr. Guyon found it in that of a horned viper, which had been given him at the caravanserai of Sidi-Makhlouf, Algeria. The reptile had been put into a bottle, which had since remained hermetically closed. It had been in there for six weeks without food and without air, and looked quite dead, since it could not stir in the bottle, which it filled entirely. And yet, on opening the bottle, the doctor found the reptile perfectly sound, and saw it kill a large fowl instantaneously with its sting. Our author quotes another case, that of a scorpion that had been kept in a bottle for a long time, and on being released killed two sparrows in less than a minute, and a pigeon in three hours. Dr. Guyon devotes some space to the symptoms which accompany the infliction of a bite by such reptiles; first, a violent pain at the moment of receiving the wound, then an unconquerable itching on the spot, then trembling, vomiting, difficulty of breathing, often accompanied with a cough, a dilatation of the pupils, muscular contractions, tetanic symptoms, &c.

Urea in the Milk of Herbivorous Animals.—M. Lefort, by the evaporation of the whey of cow's milk, removing from time to time the caseous and albumenoid matters, then allowing it to cool and pouring the liquid part from the sugar and salts into alcohol, heating this so as to promote the solution of the urea, and to the filtered solution evaporated to the consistence of syrup, adding strong and pure nitric acid, obtained nitrate of urea with a small quantity of nitrate of potash. From eight litres of whey a gramme and a half of nitrate of urea was procured by him.

Influence of Ozone on Germination.—Mr. M. C. Lea having investigated the effects of ozone on the germination of seeds and vegetation, finds that ozone tends to check the growth of young plants; wheat in air growing ten inches, while that exposed to ozone grew only four inches. Ozonized air also diminishes the length of the roots, those exposed to it becoming only three sixteenths of an inch long, while others increased to two and a half inches. He likewise concludes that although ozone is a highly oxidizing agent it may, in some cases, put a stop to putrefaction by destroying the low order of vegetable organisms which Pasteur has shown to be, to a large extent, the medium of effecting these changes.

THE VETERINARIAN, JUNE 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE ANNUAL MEETING.

THE Annual General Meeting of the members of the profession was this year fully attended; probably the interest which has been excited by the proposed veterinary bill, which was then before parliament, had some effect in inducing a larger number than usual to give their support to the President, Professor Varnell, who was in the chair.

During the discussion which followed the motion "That the report be received," the subject of the bill was entertained, and numerous opinions pro and con were given. We do not for our own part object to the desire entertained by the profession for more comprehensive privileges, but we cannot shut our eyes to the fact that the Bill, which is condemned by many on account of asking so little in the way of immunities, really seeks for more than we are likely to obtain.

The proceedings were commenced by the Secretary, *Mr. W. H. Coates*, reading the advertisement convening the meeting. It concluded with the following announcement: "After the Annual General Meeting a discussion will take place upon the subject of the Veterinary Medical Bill, and an application to both Houses of Parliament."

Mr. Mayer said the advertisement was not drawn in accordance with the Charter. He took great interest in the Bill now before Parliament, and he wished that it should be fairly discussed; but it could only be discussed at the annual meeting, or at a special meeting called for the purpose, not after the business of the annual meeting was over, as the advertisement pointed out. Therefore it appeared to him that they were precluded from discussing the question at all. It ought to have been in the advertisement as part of the business of the annual general meeting.

Professor Spooner said it had always been understood, and it was clearly expressed in the Charter, that the business of the annual general meeting should be limited to electing members of the council in place of those who went out by rotation. But it was also equally clear that the council had the power to determine that other matters should be discussed subsequent to the performance of that duty, but not as part of the business of the annual general meeting. He understood the council were of opinion, that it would be advisable to discuss the question of the Bill, as suggested by Mr. Mayer.

Mr. Mayer said he was perfectly content.

The Secretary then read the Report of the Council, and the Financial Statement.

Mr. Cherry moved, and *Mr. Dray* seconded, that the Report be received. The motion was carried.

The Chairman said, as there would doubtless be a discussion on the motion that the Report be adopted, he would suggest that gentlemen keep to the point as much as possible, and that the consideration of the Bill should be deferred until Mr. Mayer brought forward his motion on the subject.

Mr. Mayer said he should decline to discuss the subject after the annual meeting was closed. He should have no objection to a special meeting being called for one purpose; but, in the mean time, he should like to know whether there was any probability of the Bill passing through Parliament this year.

The Chairman said the Bill in Parliament had been altered, why he could not explain. The fourth clause had been altered to what it was in 1865, in deference to the views of the Government, who would not consent to a retrospective measure.

Mr. Wilkinson said he thought it was competent for them to discuss the Bill at the meeting.

Professor Spooner said any member could discuss the subject if he liked.

Mr. Mayer said, he would then move that the Report be referred back to the council for reconsideration, and

that an adjourned meeting be held to consider the question of the Bill.

Mr. Wilkinson said, they did not know when the Bill might be called on for the second reading; therefore there was no time to lose.

Mr. Ernes said, it was very likely the second reading would come on this week; and as they had the Report before them, he thought they had better discuss it at once. Clause 4 had been altered, for the reason stated by the chairman, and they had gone back to the clause of 1865. He doubted much whether they would even get that, but he would advise them to get what they could. He might also point out an omission in the "Reasons" given for the Bill. It was in his opinion very important to inform the Government that, in proportion to the population, the wealth, and the quantity of stock in the country, the number of the veterinary profession is wholly inadequate. That fact had been fully established by the course taken during the cattle plague. Where inspectors had been appointed from the profession, there was only one appointed where there was work enough for three or four, and in other instances men had been appointed who were not members of the profession. He believed the rapid spread of the disease in this country was to be attributed to that circumstance. He thought they ought to point out to the Government that, unless the profession were protected, the number of qualified veterinary surgeons was not likely to increase. Young men of standing and education would never come into the profession, if they found they were to be exposed to competition with quacks, who were very often preferred to the regularly educated man, even by the nobility. The veterinary surgeon, however eminent, was debarred from those distinctions and honours which were open to the members of other learned professions, nor were they sufficiently esteemed by the public and by those who had occasion for their services. Professor Spooner said a short time ago, that instead of raising the profession above the quack, the quacks were drawing the profession down to their level. This was true, and for that reason they ought to make all the efforts they could to push

the Bill on, in any shape, and get what protection they could against the increase of quacks. They did not propose to interfere with those who now called themselves veterinary surgeons; all they could hope for, from the passing of the Bill, was, that no person hereafter should be allowed to style himself a "veterinary surgeon" unless he were a member of the College of Veterinary Surgeons.

Mr. Lupton said he agreed with Mr. Ernes, that the Bill ought not to be retrospective, and that it was better to get something than nothing. They would, then, trust to time to extinguish the present race of farriers. He trusted the profession would never go down to the level of the farrier. It depended entirely upon themselves; and he must say here, that the profession was injured by the want of elementary education in the junior members, who ought to know something of classics and mathematics, in order to train their minds to be capable of grasping the subjects that now engaged the attention of the profession.

The Chairman suggested that the discussion was premature, until some gentleman moved that the Report be adopted.

Professor Spooner moved that the Report be adopted.

Mr. Gowing seconded the motion.

Mr. Mayer said he would endeavour to confine his remarks to those portions of the Report which he could not agree to. They had come to a grave crisis in the history of the profession, and it behoved every member to put his shoulder to the wheel, and support any proposition which would amend their situation, or give them those rights and privileges which they had a right to expect. Had they been treated by the Government of the country with that degree of courtesy to which they were entitled? Ten years ago the Government were placed in possession of information relating to the Cattle Plague. Now, what would have been the policy of the Government had this been a human disease? They would have placed themselves in communication with the President of the College of Physicians, and the President of the College of Surgeons. And pray, ought not the President of the College of Veterinary

Surgeons to have been consulted, when such a grievous calamity as the cattle plague afflicted the country? (Hear, hear.) Yet, notwithstanding these discouragements, the veterinary profession had given information of a very important character, with reference to the measures to be taken for subduing the disease. But Government took no notice of these suggestions, but allowed the disease to spread east, west, north, and south; and, then, they sought the services of the profession to carry out their suicidal policy (Hear, hear). The next thing was the appointment of a Commission to inquire into the nature of the disease. What was the composition of that Commission? Had the Government shown, in the selection, any confidence in the veterinary profession? How was it that, in a matter affecting their interests so closely, the profession was represented by a single unit? It was true that the name was a tower of strength, but could not Professor Simonds, after thirty years' teaching, have suggested some pupil worthy to take a seat by the side of Professor Spooner? Why should they be slighted by the omission of their President on the Commission? And he thought Mr. Hunt and Mr. Robinson were as worthy to have a seat on the Commission as Dr. Bence Jones and Dr. Quain (hear, hear). These things had a discouraging effect, for they tended to lower the profession in the estimation of the public. If their position was to be changed, nothing less would satisfy the profession than having all the rights and privileges which are enjoyed by the Royal College of Surgeons. He would rather be without any Bill, if it did not give them what they had been promised by the Government. Some years ago, Sir James Graham told them to wait and see what was done for the College of Surgeons; that what Parliament granted to them he did not think they would refuse to the veterinary profession. He was satisfied Government did not know their position; and he was satisfied that the only way to bring it clearly before them was to have a Commission, or a joint committee of both Houses, to inquire into the state of veterinary science in this kingdom; and upon the evidence given before that body he thought the profession would be

likely to get a far better Act of Parliament than the one they were now applying for. He would, therefore, move that the Report be referred back to the Council. It was only that part relating to the Bill that he objected to.

Mr. Cherry seconded the amendment.

The Chairman asked Mr. Mayer to point out what he considered the defects in the Bill.

Mr. Mayer said the Bill did not give the same privileges which were conferred on the College of Surgeons. He thought the fourth clause required alteration. Nor did he see any means by which a man could prove that he was on the Register.

Professor Gamgee believed they need not enter into any lengthened discussion upon the subject. His feeling was in favour of a discussion at the annual meeting, but his views did not seem to find favour with the Council. Circumstances, however, had brought them to the position in which he desired to see the question. Before the Report was adopted, permit him to make a few observations, especially in reply to Mr. Mayer. He was one of those who had had to feel, to a very large extent, the sting of that slight and inattention to which Mr. Mayer had referred, but on the part of the public at large, more than on the part of the Government. At the same time, they must not forget that there had been in their profession an absence of unanimity, and an absence of knowledge, for which they must hold themselves responsible. He said this in deference to all who had been engaged in the teaching of their profession; indeed, he was one of those who had had to battle against many circumstances which steadily interfered with the onward progress of veterinary education. The cattle plague was destined to change things in their favour. However much they might have suffered in times past, it was now recognised that the veterinary profession can protect this and other countries from the devastating plagues which threatened the very life of man. Several years since, he urged the appointment of inspectors; and it would have better served their purpose had they been appointed then than by appointing them now. He could not charge

the Government with not having listened in times past to the suggestions of the veterinary profession. They had listened so far that they had brought in Bills destined to place the profession on a better footing, and to prevent the introduction of plagues into this country. But they were opposed, he was sorry to say, by members of the profession itself. Now, what he wished them to do was this, that whilst the Government was desirous to help them, let them not turn round and say they would not accept anything until Government were prepared to grant them the full measure of their requirements. It was a great thing to get in the thin edge of the wedge. He admitted that the present was a great crisis; but if the question were better understood he believed many would not oppose who were now disposed to do so, because Parliament would not make the measure retrospective. They should remember this, that although not retrospective, the Bill did not legalise men to call themselves "veterinary surgeons" who were not members of the College. The man who, without being qualified to do so, called himself a "veterinary surgeon" prior to the passing of the Act, could not be prosecuted; but he would still be trading under false colours, and would soon fall into disrepute. Therefore, he did not see why members should be afraid of the operation of the Bill, even if it were not made retrospective. By the advice of Mr. Holland and Mr. Newdegate, the Bill had been referred to the Home Office Counsel, with the view to obtain Government support. The legal adviser of the Crown said it would be impossible to obtain an Act which should go so far back as 1845. The Government had this before them, evidently, that if they granted power to prosecute those who had falsely called themselves veterinary surgeons since the granting of the Charter in 1844, the profession might the very next day pounce upon and fine people who were unaware of what steps had been taken. It was important they should obtain as much as they possibly could. Many would like a clause with regard to exemptions from juries. He believed the profession would obtain that advantage, but not by inserting a clause in a Bill of this description. He believed they

would require some special Act, a kind of amendment to the Jury Act, by which they might obtain exemption. He believed Government and many members of Parliament were willing to accord that advantage to them. They must not blame other people for their own shortcomings, nor believe that the whole world was in arms against them, or that society was not ready to receive any accomplished man, whatever might be his calling. As a veterinary surgeon, and as a member of society devoted to scientific pursuits, he did not find that he was put second to this person or third to that. They could assert their position; and, on the whole, he did not find that people snubbed them for it. They had, to a large extent, been dragged down by the force of circumstances; but, as scientific men, they could hold any position if they chose to raise themselves to that position. The object of the Bill was to protect the public from being imposed upon by men trading under false pretences; and let them remember that, while they accepted all they could get now, it depended upon their own efforts to raise themselves in the esteem of mankind.

Mr. Helmore wanted to know what advantage would be gained by referring the Bill as proposed by Mr. Mayer. There was no opportunity of altering the Bill, in its present shape; and, although he agreed with Mr. Mayer, particularly with regard to the *status* of the veterinary surgeon, yet he must object to any further delay, unless it could be pointed out that some advantage would be gained. As Mr. Gamgee said, their respectability depended so much upon themselves that it was hardly worth while to ask too much at the present time. To make the Bill retrospective was quite against the tone of legislation in this country.

Mr. Wilkinson thought the question was one that was proper to be brought before the meeting. The Bill was now proposed to be antedated to six months previous to the passing of the Bill. The subject had received the utmost attention from members of the Council, and steps had been taken to ascertain the opinions of the body corporate; and the result was, that a large number of practitioners were in favour of antedating the Bill to the period of the Charter,

and not of making it date from some time in 1866. People, it seemed, did change their minds; but he had not changed his. Those gentlemen who were associated with him in the army were not affected by the Bill at all; it did not signify to them whether three thousand or five thousand were added to the list of veterinary surgeons. Still, he thought the Bill would be depressing and injurious to gentlemen in private practice. When it came into operation it would introduce, if it did not actually give authority to, quacks, as Mr. Ernes called them. It would give them permission to use the term of "veterinary surgeon," and the public would not know the difference between a member of the Royal College of Veterinary Surgeons and the quacks who would be permitted to use the name. Therefore, he thought the two or three thousand who would be permitted by the Bill to call themselves by this name would swamp the profession. It was for them to say whether it would satisfy them to have this permission granted to the quacks that were surrounding them. (Hear, hear.)

Mr. Gamgee said the Bill did not permit these men to use the name of veterinary surgeons; it only did not fine them.

Mr. Wilkinson said the effect of the Bill would be to permit them. It was a permissive Bill, and many of these people, knowing it was a permissive Bill, had availed themselves of it to use the name of veterinary surgeon. How, after this, would they be able to prosecute any man who called himself a veterinary surgeon? The man would say to the jury, "A year or two ago they permitted two or three thousand men to call themselves veterinary surgeons, and I have as much right to call myself a veterinary surgeon as they have." What could be said by a court or jury in a case of that kind? They would overrule the prosecution. He did not believe that either the College, or any combination of members, would ever prosecute. If they did, they would make a hero and martyr of the man, and bring him more practice than he had before. The College of Surgeons had given up prosecution as a dead letter. He maintained they had the power to prosecute by their Charter; and by

the Bill they were annihilating that power, by allowing these men to call themselves veterinary surgeons, which by the Charter they had no right to do.

Professor Spooner said it was not his intention to have spoken; but after the remarks which had fallen from Mr. Wilkinson, differing widely as he did from the opinions promulgated by that gentleman, he could not sit any longer in silence. The gist of Mr. Wilkinson's remarks was simply this, that because they could not obtain all that they wished, let them remain as they were—not ask for anything —not take the first step in advance. Again, with reference to their present position, Mr. Wilkinson led them to suppose that they were in a position to prosecute an individual who falsely designated himself by the title of veterinary surgeon. They were in no such position. The position in which they were placed was this:—If an individual at the present time, practising under the title of veterinary surgeon, should be asked by the person who employs him, "Are you a member of the Royal College of Veterinary Surgeons?" if he asserted that he was, then it was competent for the individual so employing him to prosecute him. But as a body they had no such power. Then, with reference to their position under the Bill, it was true there would be many an individual who would be able to snap his fingers at them, but the Bill would give to that individual nothing. He would be in just the same position, as regards the College of Veterinary Surgeons, that he is at present. If an individual so assuming the title went into court and was asked, "Are you a veterinary surgeon?" "Yes." No one could deny it. But, "Are you a member of the Royal College of Veterinary Surgeons?" "Yes" —then he committed perjury. He considered it most important that they should take the first step in advance; and if they succeeded in obtaining the Bill, as it stood at present, it would be a great object towards the end they had in view, namely, the advancement of their profession, and its enhancement in the estimation of the public at large.

Mr. Goodwin said he thought it was unlikely that any retrospective Bill would be granted. In 1815 it was

proposed to make the Apothecaries' Bill retrospective, but it was scouted immediately. Now, was it likely, when such a company as the Apothecaries' Company failed in making their Act retrospective, that the veterinary profession were likely to be more successful.

Mr. Rogers asked for some information as to the alteration.

The Chairman said the Bill, as altered, is retrospective for six months only. It was suggested by counsel to make it six months, to prevent individuals in different parts of the country assuming the title of veterinary surgeons, after hearing that such a Bill was on the *tapis*.

The Member.—That is all the difference between the two Bills?

Professor Gamgee.—That is all.

Mr. Rogers.—Then I do not think the difference is worth talking about.

The Chairman said, before putting the amendment, he would make a few remarks with reference to the progress of the Bill. In 1863 a Bill was introduced, or rather embodied with a Bill that was then being introduced, with the view to get certain exemptions. Nothing on that occasion was mentioned about prevention. Again, in 1863, the draft of a Bill was got out to be laid before Parliament, to include exemption from serving on juries and filling parochial offices, and prohibition to men falsely assuming the title of veterinary surgeon. Mr. Wilkinson was a member of the committee, and no objections were raised against the Bill at that time. In 1864 Mr. Mayer, in discussing the fourth clause, said he did not object to a person calling himself a "veterinary surgeon," but to his calling himself a "Member of the Royal College of Veterinary Surgeons." Mr. Mayer seemed to have altered his opinion since then. In 1865 the Bill was thrown out. Then, in January, 1866, the Council agreed that the present Bill should be presented; and their legal adviser suggested that, as there was no chance of getting a retrospective Bill, it should be made retrospective for six months. The Council agreed that the Bill should be dated back to the date of the Charter, and if

they found the Government was opposed to that, then to take a less period. Mr. Holland told them there was no chance of getting a retrospective Bill; and after consultation with their legal adviser, it seemed that the Bill had been dated back six months. He would now put the amendment.

The amendment of Mr. Mayer was then put and rejected by a large majority. The original motion was afterwards put and carried.

The next business was to appoint scrutineers, and to take the ballot for the vacancies in the Council. *Mr. Percival* and *Mr. E. Woolger* were appointed the scrutineers, and the following gentlemen were elected:—Mr. Wilkinson, Mr. Robinson, Professor Simonds, Professor Spooner, Mr. Coates, Mr. C. Hunting, and Mr. J. D. Broad. One of the vacancies was caused by the loss of Mr. Braby; and on the ballot being taken for his successor, it fell to the lot of Professor Simonds.

The customary vote of thanks to the Chairman was moved by *Mr. Ernes*, and seconded by *Professor Gamgee*.

THE ANNUAL DINNER.

The annual dinner, which took place in the evening at the London Tavern, Bishopsgate Street, was more numerously attended than usual. Among those present were the President, Professor Varnell, Professors Spooner, Tuson, Gamgee, and McCall, the principal Veterinary Surgeon to the Army, and Messrs. W. Mayer, Royal Engineer Train, Assistant-Professor Pritchard, also Messrs. Armitage, Aubrey, Barford, Boughton, Barrow, Batt, Bland, Broad, Brydon, Burrell, Cartledge, Coates (*Secretary*) Cockburn, Garrard, Gill, Dale, Dyer, Greaves, Hill, Hunt, C. Hunting, W. Hunting, Lawson, Lawrence, Moore, Moseley, Meyan, Pritchard, Row, Rogers, Rushall, Secker, Seaman, Stanley, Simpson, Shaw, Wilkinson, Withers, Whitimore, Woodger, E. Woodger, G. Woodger, &c.

The President, Professor Varnell, occupied the chair, and

Professor Tuson and Assistant-Professor Pritchard assisted as Vice-Presidents.

The chief speakers, besides the President, were Professors Spooner, Tuson, Gamgee, and McCall, the Veterinary Surgeon General of the Army, and Messrs. Walter Mayer, Army; Cartledge, Sheffield; Lawson, Manchester; Hunt, Birmingham; Hunting, South Hatton; Batt, London; Woodger, London. Following the usual loyal and patriotic toasts were "The Veterinary Profession and the Schools;" "The London Practitioners;" "The Provincial Veterinary Surgeons;" "The Royal Agricultural Society," &c.

Reunions like this leave little to be desired to keep the profession true to itself and its members true to each other.

Extracts from British and Foreign Journals.

CATTLE DISEASE IN INDIA.

SECOND OFFICIAL REPORT, BY MR. JAMES THACKER. M.R.C.V.S.

PROCEEDINGS OF THE BOARD OF REVENUE, dated 16th March, 1866.

Read the following letter from P. Grant, Esq., Collector of Coimbatore, to the Secretary to the Board of Revenue, dated Matoopollium, 9th March, 1866, No. 63:

1. I beg to forward, for the information of the Board of Revenue, Mr. Thacker's Report on the outbreak of cattle disease or rinderpest on the Neilgherries, and of the measures and treatment adopted by him to arrest it.

2. The Report is so full and exhaustive that any remarks on my part are unnecessary.

From personal inquiries amongst the people in different parts of the district, I learn that the cattle disease has been well known for many years. In some parts of the district it is called the "Great or deadly disease," and in others "Smallpox."

3. Outbreaks of the disease during the hot months are said to be far more deadly than in the wet season. Cooling drinks and mashes if given in its early stages prove at times beneficial; but if it has been allowed to gain head, they are

perfectly useless, and no remedies to arrest its progress are known.

Enclosure No. 1.

REPORT.

INTRODUCTION.

1. In accordance with Orders of Government, dated 4th September, 1865, No. 2214, I proceeded to Ootacamund to investigate the nature of the Cattle Disease, which the Collector of Coimbatore reported to be existing on the Neilgherry Hills.

2. On my arrival I ascertained that the Epizootic had for the time ceased, the Apothecary at the Lawrence Asylum sites having treated successfully, on the plan I recommended, the cattle that were attacked there; details of which, with the general result of my inquiries into its nature and virulence, were forwarded to Government, through the Collector of Coimbatore, and afterwards published in Miscellaneous Circular, No. CLXXI, of 18th December, 1865.

3. At the request of Mr. Grant, I remained at Ootacamund until a reply had been received from Government, to a reference made for my farther services in inquiring into the nature of a disease that was reported to have broken out among the sheep of this district.

4. Before, however, an answer was obtained, the cattle disease again appeared on the Hills, and with the concurrence of the Collector, I proceeded at once to adopt such measures as I deemed necessary to endeavour to subdue it, and to prevent its spread.

5. The attack was short and virulent, aud, confined chiefly to the cattle in and around Ootacamund, and to villages within a radius of five or six miles from it, subsided finally about the middle of January, 1866. Full particulars, with the successful method of treatment, by which nearly fifty per cent. of those attacked were saved, are hereafter given. (See Appendix B.)

6. At the end of January, I proceeded to the Bowany Taluk where the disease was reported to prevail; but on arrival there, finding my services were happily not required, either for this or for the disease among sheep, I returned to Coimbatore, after giving such general directions and advice, in case of a further outbreak, as I thought would be intelligible.

7. I then proceeded with the collector to the large grazing grounds near to Gopaneiry, but without having an opportunity of seeing more of the disease, and have only now to record the results of my inquiries into, and treatment of this malady, which I believe to be the true form of "rinderpest," as now prevailing in England.

HISTORY OF THE RINDERPEST.

8. The herds on the Neilgherry Hills have been periodically attacked by it, but no definite information as to the exact time of its

appearance was to be obtained. The concurrent testimony, however, of the different hill tribes is to the effect, that it was not known until Ootacamund was made a European settlement; thus giving rise to the conjecture that increased communication with the plains may have been the cause.

9. That it is not of very recent introduction is evident by the fact of the appreciation by the Todas and Badaghars of its formidable nature, and of the sagacity and promptness with which they endeavour to overcome its destructive powers, by at once establishing a rigorous quarantine in any village where it is known to exist, and by breaking up large herds into small detachments, which are kept as far separate as possible.

10. These preventive measures are promptly taken; but as far as I could learn, the animals are not medicinally treated, and though I personally endeavoured to persuade a Badaghar, who had lost eighty head of cattle from this cause, to make use of the medicine in the cases he then had attacked, he refused, having lost faith in it, on account of the unsuccessful application in two cases of some that had been previously sent out to him through the Tahsildar; but in the preliminary measures of segregation, the hill tribes are far in advance of their brethren in the plains, who do not seem to care to adopt so simple a precaution.

11. The first recorded information is to be found in the Report of Mr. McIvor ('Proceedings of the Board of Revenue,' dated 16th June, 1864, No. 3618), wherein he describes the Epizootic that prevailed in 1864 among his own cattle, and among the herds of many of the villages of the Neilgherries and Koondahs, to be "Pleuro-pneumonia" of a virulent type, so much so, that on the average not more than two per cent. of those attacked, recovered; and by which visitation it was said many large cattle-owners among the Todas and Badaghars were reduced from wealth to comparative poverty.

12. The symptoms and pathological appearances were certainly not those of "Pleuro-pneumonia" as I have already stated in my letter to Government, 12th July, 1864, 'Proceedings of the Board of Revenue,' dated 19th July, 1864, No. 4503; I then entertained the strongest suspicions that it was the true form of "Rinderpest;" these were subsequently confirmed on my showing to Mr. McIvor the dissected body of an animal that had died of the latter disease on the 20th December, 1865, when he admitted that the cattle which died in the visitation of 1864, exhibited exactly a similar appearance.

13. In my Report of 1864, I added, as an appendix, a short description of the disease, and mode of treating it, intended to be within the comprehension of the Ryots, but a further and more detailed account is hereunder given.

CAUSE OF THE DISEASE.

14. Of the proximate cause of the disease I can say nothing; I am, however, inclined to believe that atmospheric influences are at

work, as evidenced by the simultaneous outbreak and cessation of the disease in places remote from each other. Once the disease is generated there is no doubt that it is eminently contagious. In illustration of this, I record an instance which came under my own observation in December last, when attending a case in Ootacamund; I advised the proprietor to separate carefully his healthy cows, of which he had four or five, from the sick one, on which he sent one which was not giving milk, to a relative some miles distant, who kept a herd of 120, all apparently in perfect health. The sick cow died, but the one sent away, and the others that were kept separate at Ootacamund, never exhibited any symptoms of disease, but within one week of the introduction of the strange cow, the bull of the herd, who had first noticed her, died; and within a fortnight or so of that time, seventy had been attacked out of the 120, of which twenty-two cases terminated fatally.

15. The disease in this case was probably communicated to the herd by the strange cow, carrying in some manner the infection in her hide, but which having no influcnce on herself, caused such destruction to others.

16. The excreta are also, I believe, a potent agent in the spread of the Epizootic. Healthy animals being driven along roads or over pasture grounds previously visited by those diseased, smell the fæces, and thus become infected: besides, the dung of the sick may be used by the natives to smear the floor and walls of cow-sheds inhabited by healthy cattle; in which way may be explained many isolated outbreaks of the disease.

SYMPTOMS.

17. The first marked sign is a peculiar spasm of the muscles of the front of the chest and neck, sometimes also of the hind-quarters. This is apt to be mistaken for shivering, which not unfrequently accompanies or succeeds it. Rumination ceases, and in cows the secretion of milk is stopped; the coat stares, the ears droop, the back is arched, the hind legs standing under the body. In the early stage, the temperature rises to 105° falling to 88° as debility becomes marked. The pulse is, at first, but little disturbed, but with the development of the disease it rises to a hundred or more, becoming smaller and weaker in tone. Respiration is somewhat quickened, and, when the respiratory muscles become involved in the spasm already noted, is laboured, but is not otherwise affected.

18. Differing from what I observed in Kurnool there was, in most cases, very little mucous discharge from the eyes and nose. The bowels at first constipated, afterwards became relaxed, followed by a most fœtid watery purging, and as the disease approaches a fatal termination, small evacuations of green mucus mixed with blood are passed. The disease proved fatal in from twenty-four hours to eight days.

19. When an animal began to progress towards recovery, the first sign indicative of improvement was an increased quantity of fæculent matter in the evacuations, which gradually assumed a more

consistent character, the pulse became softer and fuller, then the appetite began to return, the warmth of skin became natural, and lastly, rumination began, and in the cow, the secretion of milk returned.

PATHOLOGICAL APPEARANCES.

20. The pathological appearances are principally confined to the digestive mucous membrane.

21. The back part of the mouth, fauces, and pharynx, present a dark red congested appearance with occasional "ecchymosed" effusion of blood under the skin spots, and small superficial ulcers; the mucous membrane of the larynx has a similar appearance, and the trachea is slightly heightened in colour.

22. The œsophagus, rumen, and reticulum are healthy. The rumen is remarkably full of food of a natural appearance; the omasum is full of hard dry food, but its structure is generally healthy, sometimes the mucous membrane peels off readily.

23. The most striking character is in the abomasum or true stomach, which presents in some places a dark purple appearance, and in others a dirty gray or brown, with small spots of black pigment scattered over its entire surface; here and there are small spots of superficial ulceration, rather less than quarter of an inch in diameter.

24. The small intestines have a similar character. The anterior part or duodenum is similarly congested, and, in addition, has occasional yellow patches of exuded lymph. These patches are attached, by their centre, to the mucous membrane, the circumference being loose; when removed, the portion of the mucous membrane to which they have been attached, is either highly congested or ulcerated. The middle part or jejunum is less affected.

25. The posterior part or ileum presents less general congestion, but is to a greater extent, even than the duodenum, covered with patches of exuded lymph, concealing ulceration. These increase in number as the cæcum is approached. They are quite superficial, in no case penetrating the mucous membrane. There are also at intervals patches of black discoloration, surrounded by inflammatory congestion; this seems to be caused by a deposit of pigment.

26. The cæcum or commencement of the large intestine shows the ulceration in its greatest extent, almost its entire surface being covered with them. From this point it gradually diminishes, and the rectum is generally healthy.

27. The liver is healthy, the gall-bladder is generally distended, and its mucous surface sometimes shows an appearance similar to that of the cæcum.

28. The blood contains less fibrine than usual, being seldom found coagulated, except occasionally in the right ventricle. Its colour was natural, and there was no perceptible diminution in the number of the blood-corpuscles.

29. Although many specimens of the blood of diseased animals

were examined by myself and others, microscopically, both immediately after the death of the animal, and after the blood had been exposed for several days, no trace of animalculæ could be observed. As this was one of the points brought to my notice in 'Proceedings of the Board of Revenue,' No. 3668, dated 16th June, 1864, with Enclosure No. 1, letter from Mr. G. McIvor, Superintendent, Government Chinchona Plantations, after we had failed to discover the animalculæ, I requested Mr. McIvor to join me in further investigation; this he did, but also failed to point them out. I had previously been supplied by Mr. McIvor with the glass slides, containing the supposed animalculæ, from which the drawings in his letter were taken. The objects therein shown do not present any of the ordinary appearances of animalculæ, but more those of vegetable fibre.

30. Occasionally, the serous membrane lining the interior of the heart was of a dull red colour, with ecchymosed spots near the origin of the pulmonary artery. The portion of the pericardium lining the heart showed dark red spots over its entire surface.

31. The lungs were sometimes emphysematous.

TREATMENT.

32. The treatment may be divided into, first, Preventive; and second, Curative.

33. I. PREVENTIVE.—*Vaccination.*—I regret I had no opportunity of trying the effects of this as the probability of its doing good was not brought to my notice till a late period in the Epizootic and from the difficulty of obtaining fresh vaccine matter. I think it desirable that the first opportunity should be taken of instituting experiments in regard to it, especially as the present opinion in England is that the disease is a form of Variola, and in the '*Economist*' of 13th January, several instances of its successful application have been recorded.

34. II. *Inoculation.*—Matter was obtained from an ulcer in a decided case of rinderpest, and inserted under the skin inside of the arm and thigh of three healthy animals, a buffalo cow, and two heifers; the former had the disease developed on the second day, and succumbed to it on the fifth day.

35. One of the heifers appeared to have a disturbed condition of the system from the second to the twelfth day, after which complicated symptoms set in, and she died on the sixteenth day. The *post-mortem* examination showed that the disease had existed, but was not possibly the cause of death.

36. The third animal had the disease on the eighth day, culminating on the ninth, from which date she gradually recovered, and was discharged cured on the twenty-second day.

37. The record of the symptoms with the daily remarks is appended (Appendix A), but it is to be observed that these animals were not medicinally treated, it being thought advisable to allow the disease, as an experiment, to run its course.

38. This, however, was too limited to allow of any data being

deduced for general guidance, and it may, perhaps, be thought advisable that a further trial should be made; I am, however, inclined to the opinion I formerly held, viz., that the danger of dissemination by inoculation is scarcely to be counterbalanced by the possible advantage of producing the disease in a milder form in the animal operated on.

39. III. *Separation.*—The importance of this is so undoubted, and has already been so fully referred to in my previous Report, that I do not consider it necessary to enlarge upon here. The present Act, founded on such suggestions, if properly carried out, will do much to prevent the future spread of the disease.

40. IV. *Cleanliness.*—This is a point of the greatest importance, and could it be fully impressed on the native mind, an outbreak of the Epizootic might often be prevented, and certainly the primary virulence of the disease might be considerably mitigated. The cattle-sheds should be cleaned out several times a day, and the excrement buried.

41. I would suggest that great care should be taken to prevent the natives smearing the floors and walls of the cattle-sheds with the dung of diseased animals, indeed, in opposition to my former recommendation, I would suggest that the use of cow-dung should, in seasons of Epizootic, be entirely prohibited, and that mud or lime should be alone used.

42. I. *Cure.*—Camphor, nitre, datoora, cherayta, arrack, opium, and catechu, I continued to use, as recommended by me in my previous Report. and my success was such as to confirm my previous opinion of its efficacy; the proportion of cures was not so great as before, yet that can be accounted for by climate and other influences. Table B of the Appendix shows the result of this treatment.

43. II. *Vapour Bath.*—Three cases were subjected to this treatment, of them two recovered, and one died; in one case of recovery, however, I am not certain that the result was altogether due to the vapourbath, as before using it the animal appeared to be improving.

44. My experience has been too slight to enable me to form an opinion, but I would be disposed to give it a further trial, were proper appliances available. I do not think, however, that it will ever be generally adopted by the agricultural population, owing to the difficulty attending its application. A detail of these cases will be found in Appendix C.

45. III. *Chlorate of Potass.*—Having observed that the use of this salt was recommended in an English journal, on theoretical grounds, I tried it in two cases, but both animals died, the medicine appearing to exert no effect on the progress of the disease.

46. IV. *Condy's Disinfecting Fluid.*—This was tried in conjunction with other medicines, and, as an adjunct, I believe it to be useful.

Concluding Remarks.

47. In the foregoing portion of this Report the history of the late Epizootic has been given in detail. It now only remains to state what means should be adopted in any future outbreak.

48. On the receipt of the information, an officer should be despatched to the spot, to see that the terms of the Act relating to quarantine, &c., are properly carried out; the village herd should, if practicable, be broken up into manageable detachments, and the sick carefully separated from the healthy. Cleanliness should be strictly enforced, the excreta buried, and the use of the cow-dung in cleaning cattle-sheds for the time prohibited. The bodies of such animals as die of the disease, should be buried, with their hides on, in an enclosed space, so as to prevent the approach of healthy animals. For the animals suffering from the disease, the general line of treatment, recommended in my former Report, and published in the local Gazettes, should be followed.

(Signed) J. THACKER,
Veterinary Surgeon.

COIMBATORE;
2nd March, 1866.

APPENDIX A.

INOCULATION.

CASE I.—*Buffalo Cow.*

December 9th.—Having the animal thrown down and properly secured, made an incision with a lancet through the skin, on the inside of the arm and thigh, in the neighbourhood of the large absorbent vessels; a portion of lymph from an ulcer of a decided case of rinderpest was inserted, and the incisions closed by thread sutures.

10th.—Slight constitutional disturbance, animal feeding.

11th.—Pulse 76, and hard in character, temperature of body 101°, considerable swelling around the wound on the arm, and very great pain in the hind leg, the animal holding it in the air; anxious countenance; evacuations normal.

12th.—Evidently suffering very great pain in the hind leg, pulse 88, small and wiry, temperature 101½°; nose dry and hot, fever present; bowels purging, but not of a diagnostic character. Remove sutures.

13th.—Died. *Post-mortem* appearances. The abomasum, small intestine, cæcum, and anterior portion of colon highly congested, with some few of the characteristic yellow lymph spots covering either inflammation or distinct ulceration. The exterior of right ventricle of the heart ecchymosed, and internal lining much congested. The inoculated wounds of a dark dirty colour, fœtid odour, almost gangrenous in character.

CASE II.—*Black and White Heifer.*

December 9th.—Inoculated inside arm and thigh with lymph taken from an ulcer of a case of rinderpest.

10th.—Pulse 60, with good tone; appetite good; evacuations healthy.

11th.—Pulse 80; temperature 101°; no diagnostic symptoms; appetite good.

12th.—Pulse 80; temperature 101°; ditto.

13th.—Pulse 76; temperature 102°; no diagnostic symptoms; appetite good.

14th.—Pulse 88; temperature 103½°; ditto.

15th.—Pulse 100; temperature 105°; feeding; evacuations normal; no diagnostic symptoms.

16th.—Pulse 78; temperature 97°; no other change.

17th.—Pulse 72; temperature 97°; ditto.

18th.—Pulse 74; temperature 99°; ditto.

19th.—Pulse 96; temperature 100°; ditto.

20th.—Pulse 84; temperatore 100°; ditto.

21st.—Pulse 92; temperature 100°; ditto.

22nd.—Pulse 86; temperature 100°; observe slight foaming at the mouth, but cannot see any cause on examination.

23rd.—Pulse 92, and only to be felt at the heart; throat much swollen; tongue pendulous, and excoriated on its under surface; partakes of no food; incapable of drinking on account of the swelling. Tongue freely lanced, and hot fomentations used.

24th.—Pulse 115 and weak; countenance anxious; great prostration; labored respiration; swelling of throat extending downwards, can neither eat nor drink; continue hot fomentations.

25th.—Died. *Post-mortem* appearances. Acute inflammation of the pharynx and larynx, extending a little down the trachea, surrounding tissue filled with infiltrated serum, sufficient to have caused suffocation. The abomasum and cæcum have faint traces as of healed ulcers, there is no pigmentary deposit.

Case III.—*Red Heifer.*

December 9th.—Inoculated from rinderpest lymph, under the skin, on inside of arm and thigh.

10th.—Pulse 70; temperature 90°: feeding.

11th.—Pulse 88; temperature 101°; ditto.

12th.—Pulse 76; temperature 102°; ditto; remove sutures.

13th.—Pulse 78; temperature 102°; ditto.

14th.—Pulse 80; temperature 103°; ditto.

15th.—Pulse 87; temperature 103°; appetite moderate.

16th.—Pulse 100; temperature 102½°; ditto, better.

17th.—Pulse 110, small; temperature 97°; nose dry, tremor; appetite indifferent; bowels purged, mixed with the characteristic mucus of rinderpest; support well with gruel and keep warm.

18th.—Pulse 111, with better tone; temperature 98°; appetite slight; evacuations fluid, slightly streaked with blood.

19th.—Pulse 98, good tone; temperature 98°; bowels passing more healthy fæcula.

20th.—Pulse 84; temperature 100°; bowels normal; appetite returning.

21st.—Pulse 89; temperature 99°; feeding, bowels healthy.

22nd.—Pulse 74; temperature 98°; ditto.

23rd.—Pulse 68; temperature 99°; ditto.

24th.—Pulse 64; temperature 100°; ditto.

31st.—Discharged.

APPENDIX B.

SUMMARY OF GENERAL TREATMENT.

Number.	Period of Treatment.	Result.	Number.	Period of Treatment.	Result.
	Days.			Days.	
1	8	Died.	34	6	Cured.
2	1	,,	35	1	Died.
3	3	,,	36	6	Cured.
4	2	,,	37	3	Died.
5	1	,,	38	4	,,
6	7	Cured.	39	4	,,
7	8	Died.	40	5	,,
8	5	Cured.	41	5	Cured.
9	4	,,	42	9	,,
10	4	Died.	43	2	Died.
11	5	Cured.	44	8	Cured.
12	4	Died.	45	3	Died.
13	3	,,	46	7	Cured.
14	3	,,	47	7	,,
15	6	Cured.	48	8	,,
16	5	,,	49	7	Died.
17	7	Died.	50	7	,,
18	6	,,	51	3	,,
19	3	,,	52	8	Cured.
20	7	Cured.	53	2	Died.
21	12	,,	54	8	Cured.
22	7	,,	55	4	,,
23	1	Died.	56	18	,,
24	6	,,	57	2	Died.
25	1	,,	58	9	Cured.
26	3	Cured.	59	4	,,
27	5	,,	60	14	,,
28	4	Died.	61	3	Died.
29	4	Cured.	62	5	Cured.
30	4	Died.	63	2	Died.
31	3	Cured.	64	7	Cured.
32	2	,,	65	3	Died.
33	1	Died.			

Mode of Treatment.	Number of Cases.	Died.	Cured.
Total of usual treatment .	65	34	31
„ inoculated . .	3	2	1
„ by Chlorate of Potass .	2	2	0
„ by vapour bath .	3	1	2
Total . .	73	39	34
Per centage . . .		53·42	46·58

APPENDIX C.

VAPOUR BATH.

Case I.—*Buffalo Cow.*

December 8th.—Reported to have eaten only portion of morning food, cessation of milk; pulse natural; evacuations healthy. Place in vapour bath temperature 106° for a half hour.

9th.—No further development of disease; pulse natural; nose dewy; appetite moderate; repeat vapour bath; temperature 120°.

10th.—Appetite good; increased secretion of milk; repeat vapour bath 120°.

11th.—Vapour bath 120°.

12th.—Vapour bath 110°.

13th.—Milk freely secreted; no symptoms of ailment. Discontinue both and keep under observation.

20th.—Discharged.

Case II.—*Red Heifer.*

December 3rd.—Pulse 80; bowels slightly costive; rigors, and spasms of neck; give sulphur four ozs. with Datoora mixture and Condy's fluid.

4th.—Pulse 96: fœtid watery evacuations; no appetite; repeat Datoora mixture with Condy's fluid. Support with gruel.

5th.—Pulse 88, softer and fuller; has passed a portion of intestinal mucous membrane, on the surface of which are the characteristic specks of congestion approaching to ulceration. Medicine repeated. Place in vapour bath.

6th.—Has eaten a little food; pulse 80, soft and full; bowels passing more fæcal matter. Discontinue medicine. Repeat vapour bath 121°.

7th.—Appetite steadily improving; pulse 66; nose dewy; bowels less purged. Repeat vapour bath temperature 112°.

8th.—Convalescent. Repeat bath daily.

11th.—Discontinue bath.

20th.—Discharged.

CASE III.—*Brindle Bull.*

December 5th.—Reported eating indifferently; pulse 58, full and soft; bowels natural; spasm of neck; place in vapour bath 95°, for half an hour. No medicine.

6th.—Pulse 66, soft and full; appetite slight; commenced watery purging; vapour bath 121°.

7th.—Pulse 102, small and weak; purging watery; eats nothing; vapour bath 112°; support with gruel.

8th.—Pulse indistinct; breathing laboured; purging violent; partial insensibility; vapour bath 106°.

9th.—Died. *Post-mortem* appearances. General congestion of mucous membranes, glands on sides and base of tongue ulcerated; fauces, larynx, pharynx, and upper half of trachea congested; lungs emphysematous; slight ecchymosis at base of pulmonary artery; blood coagulated in right ventricle only; abomasum, duodenum, cæcum, anterior of colour and mucous lining of gall-bladder highly congested, and covered with innumerable ulcers.

(Signed) J. THACKER,
Veterinary Surgeon.

COIMBATORE;
2nd March, 1866.

1. Ordered to be submitted for the information of Government, and that copies be furnished as follows:—

To all Collectors.
To the Inspector-General of Hospitals.
To the Commissary General.
To the Sydapet Farm Committee.
To the Superintendent Government Stud, Oossoor.

2. The Board recommend that Mr. Thacker be requested to watch the experiment now making on the Hills as to the efficacy of vaccination as a prophylactic in these cases, and to report the result.

3. It is highly desirable that this suggested remedy should be thoroughly tested.

4. The Collectors should endeavour to impress on the Ryots the primary importance of segregation when the disease shows itself, of special cleanliness and the use of disinfectants, as lime, charcoal, &c., in the byres, and that all diseased carcases be effectively buried with the hides.

(True Copies and Extract.)
(Signed) W. HUDDLESTON,
Secretary.

To the Secretary to Government, Revenue Department.
To all Collectors.
To the Inspector General of Hospitals.
To the Commissary General.
To the President Sydapet Farm Committee.
To the Superintendent Government Stud, Oossoor.

Extracted, J. Wright.

THE CAUSES OF HIGH-PRICED MEAT.

(*Concluded from* p. 423.)

Professor Gamgee, in his statistics of the loss by death of cattle from epizootic diseases brought to this country from the continent, has shown that within the year 1862 we did not lose in England less than three times the number imported. And within the last eight months upwards of half a million have been destroyed by a most frightful malady, also brought from the continent, which is still raging with unabated violence. All that the free importation of foreign cattle has done for England has been to impoverish the British farmer and assist in raising the price of flesh food. A butchery company was about to form in London a short time ago under the presidency of Earl Talbot. This company, sir, would be of little avail if sufficient animals could not be obtained to slaughter. The question we propose to consider is, how the threatened scarcity of animal food can be best averted; but there will be time only on this occasion to deal with it in one of its aspects, that, however, is one of paramount importance, viz., the question of feeding stuffs, because if it can be shown that there is a description of food close at the hand of every stock rearer which, as compared with other foods, is cheap, nutritious, and constant in its supply, the problem of economical production of flesh food will be to a great extent solved. Observing the frequent recurrence of periods of great difficulty in obtaining wholesome cattle food, it has been my constant aim to prove to the farmer the possibility of manufacturing his own by a more simple method from the produce of his farm. Wheat or barley steeped, spread upon a floor till it sprouts, and used while moist, is the material far superior in quality, and at the price of raw grain during the past five years, 20 per cent. cheaper than any other manufactured food that can be purchased. But now that its value is becoming appreciated, and its use greatly extending, the Board of Inland Revenue have informed me it is illegal to prepare the grain, except by a licensed maltster. It is truly unfortunate at this particular time of high-priced meat, scarcity of wholesome cattle food, when, to use the language of the *Times* a few weeks ago—

> "So far as meat is concerned, famine is at our doors;"

that excise restrictions should be allowed to continue upon the manufacture of any article of cattle diet, and more especially upon one which, of all other cattle foods, is the most

wholesome, the cheapest, and the quickest and best-quality mutton and beef producer, as can be irrefragibly proved by the experience and testimony of leading agriculturists of all classes. During the last two seasons a very large number of lambs have been reared, thousands of sheep fatted, and upwards of twenty different flocks debilitated by disease restored to health, in this and other neighbourhoods, by using semi-malted grain, and during the last two tropical-like summers, when the grass crops have almost entirely failed, this food has been found of the greatest value, resembling more in its effects the natural food of sheep than any other that I am acquainted with. It is an excellent substitute for turnips and green rape of winter, and the different clovers and grasses of summer. During the last lambing season, the advantage of using germinated wheat and barley has been most marked on many farms where many flocks of breeding ewes were kept, scarcely a turnip had grown, and whilst 20 per cent. of lambs were lost from flocks fed upon dry, and hence indigestible food, not more than 1 per cent. was lost from those fed upon semi-malted wheat and barley. Twenty-five years' experience has convinced me of the scarcely to be exaggerated importance of the subject. I discovered at an early period that a very large proportion of the mortality of sheep and oxen was attributed to improper food, and I then commenced a series of experiments upon the subject, which have led me to the conclusion that grain semi-malted is incomparably the best form in which it can be used as a food for cattle, and is entitled to stand in competition with any other that can be resorted to. Theoretical considerations alone first induced me to try it as food for fatting herbivorous animals, and experiments concluded fifteen years ago convinced me that grain so prepared is the most wholesome and quickest of all other flesh-forming foods. Until 1860, horses only had been subjects of my experiments, but during the spring of 1861 a nobleman in this district, distinguished for his desire to promote in every way the advancement of agricultural science and practice, permitted me to apply it to an ewe flock; the experiment was a signal success. The sheep were maintained in perfect health, and fatted their lambs very fast. From that period I have continued to urge the use of this new food upon flock-masters generally; much prejudice existed against it at first, but gradually converts were made; and when I received the communication from the Board of Inland Revenue, before referred to, not far short of 10,000 sheep, besides horses and oxen, were to my knowledge being fed with it, and on making the communication to them the

excise notice was looked upon by the different flock-masters as a positive calamity I was answered by some in the following terms:—

"Well, if the Government is determined to prohibit the use of the raw material of our own growth for the production of meat, the meat consumer must blame those to whom alone it attaches for the high price of meat."

During the winter of 1864-5 the consumption of semi-malted grain on the farms of one proprietor amounted to twenty-five sacks per week as food for sheep, lambs, and horses; and it is most satisfactory to remark that lambs from flocks, from eleven to thirteen weeks old, fetched in the metropolitan market, last spring, from 42*s*. to 44*s*. each, and lambs from the flock of another farm, fed upon the same kind of food, sold in the same market for 4*s*. 6*d*. each, the highest price obtained during the whole fat lamb season. The dams of these lambs were afterwards fatted upon the same material during the following summer, and sold at the repository in the borough from 70*s*. to 80*s*., weighing fifteen stone each. A gentleman at Spilsby, in Lincolnshire, in a letter to me, says: "Since being prohibited preparing grain, as advised by you, my lambs are not doing so well, and will not be worth so much by 5*s*. per head in the spring; were I allowed to continue the use of the grain, I have some horses which I should have no difficulty to fatten with sprouted grain, but at rest and fed upon food in sufficient quantity, they are sure to become diseased." The common raw materials of beef and mutton during the last few years have much advanced in price. I have been frequently asked if wheat and barley can be substituted. Wheat and barley may be given to oxen, sheep, and horses, if malted, but in a raw state, whether crushed or uncrushed, they are deadly poisons. The crops of turnips, marked green rape, sainfoin, trefoil, clovers, and meadow-grasses, the ordinary raw materials of beef and mutton, were far below the average of 1860; they were more deficient in the two following years, and, in the two last, next to an entire failure. The failure of the natural foods of our soil has compelled the farmer to seek for a supply elsewhere, and of foods artificial as well as natural. The different cakes have been in great demand, and, with increased demand, increased price and increased adulteration, and, from the adulteration, increased mortality of stock. The concurrence of these circumstances, combined with the growing prosperity of the labouring artizan, has produced the rising price of meat during the last five years, until it has reached a point, as I have before observed, that has

not been attained since 1813. I have reason to observe that, had not the thousands of half-fatted cattle and sheep been slaughtered through the fear of the cattle plague, and thus kept down the price of the meat-market, the price would have risen to twopence per pound higher. These animals, the farmer, under ordinary circumstances, would have kept until the coming spring and summer, and their premature slaughtering, although producing a present amelioration of prices, must necessarily augment the future evils, and meat may very reasonably be expected to reach a famine price, unless every encouragement be given to its production, and every restriction upon it be removed. I am enthusiastic enough to believe that if my plan were allowed a free and fair trial, the danger of so disastrous a result to a flesh-eating population like our own would be to a great extent removed. There cannot be a question upon the cheapness of the food recommended, as compared with other artificial foods, and, as to obtaining enough of wheat and barley, two thirds of the civilised world can supply us with these grain, but they cannot supply us with roots and grasses. Cotton cake, during the last four years, has varied in price from £5 to £6 per ton. Most of the cake I have examined contained from 60 to 80 per cent. of impurities, and the analysis of Professor Voelcker shows a similar result. Wheat has been selling during the last few years at £7 10*s*., but, if the expense of cartage be deducted, as it ought to be, the price would be reduced to £7 5*s*. In wheat, prepared as I recommend, we have a food much superior to pure cotton cake, at a price little exceeding the adulterated article; but in order to ascertain the comparative value of the two kinds of food, it is necessary to take into account the adulteration, and the cost of the nutritive portion of the cake, supposing the impurities not to exceed 50 per cent., a very rare condition, it would be £12 or 62½ per cent. above the material which every farmer has ready at his command. Barley has been selling during the same period at £6 5*s*. per ton, which gives even more favorable results. This is without taking into account the loss of cattle arising from the use of impure cake. [The lecturer then showed the different kinds of grasses, cereals, and roots used as food for animals, and designated by him the "Raw Material of Meat."] These are the raw materials of the rich juicy flesh, which "Engineer" (a writer to the *Mark Lane Express*, January 16th, 1865), says costs the farmer comparatively little, and further he adds that the epicurean appetite of the public is annually becoming more squeamish about the quantity and quality of

fat compared with what it was at the commencement of the present century. Surely "Engineer" and his epicurean friends can lately have had no other meat but fat Leicester mutton; we in the land of South Downs and half-breds have not had reason to make a similar complaint; but I am very forcibly reminded there is such a combination of circumstances as will greatly influence the production of any kind of fat or lean either; and all that the squeamish appetites of the public will have to find fault with, will be the extravagantly high price of all kinds of animal food, butter and cheese too. Owing to climatic causes there has been almost an entire failure in the natural food of our flocks, and our herds, but by a great law of compensation which underlies all the dealings of Providence in this world of ours; the same causes which have effected failure of our grasses and roots, our peas, beans, and also oats, have produced a great abundance of wheat and barley, and out of that abundance the privations arising from an extravagant high-priced meat, might have been supplied but for the arbitrary laws of man's own discovery, which stand between him and a beneficent Creator. [Here the lecturer showed the method by which saccharized grain might be easily produced.] Thus, by the abolition of the malt duties the small farmer might with his barley or wheat fat his half score of sheep, as the cottager does his pig, in order that his rent might be more easily paid by the system of profitable instalments in the purchase of food for his pig or sheep. The small farmer might steep his own grain in a very simple manner, and as easily drain and spread it out for germination to produce this "saccharized grain." The attendance would be, comparatively speaking, a mere trifle, and might be performed by a younger son, daughter, or wife. It would then be a source of great benefit to him, and place him in a better position than he is at the present time, a slight degree better than the common labourer, with all the responsibility connected with the hire of land to boot. If the chemical elements requisite for any animal exists in the food locked up, that is, in a state in which they cannot fairly be divided or dissolved in water, they cannot be used by the beast for its growth and maintenance. The richest food, if in an insoluble state, would be of no more benefit for the sheep or ox than the misers' hoards are to the wealth of the country. The nutritive constituents of raw barley are locked up, and instead of contributing to the support and building up of the animal tissues become positive poisonous agents; but by the simple method previously stated these grains can be made to

be not only wholesome, but to the beast quick fat and flesh producers. [The lecturer then produced a simple model consisting of two vessels, first a cistern, second a drainer, and third a simple wooden germinating bed divided into five compartments, and into which the grain is successively placed, and when reaching the fifth compartment is fit for animal food of the most nutritious and wholesome description.] Mr. Lawes, the agent employed by the Government, positively states that raw grain is superior to malted grain. Raw barley is a deadly poison, and no meat animal but the pig is able to digest it. Farmers dare not turn their sheep into barley stubble until rain has descended, the grains moistened, and the process of germination commenced. A gentleman, on the strength of what Mr. Lawes stated, fed sixty sheep on the raw grain, and lost twenty-five of them by his experiment. I have given the saccharized grain a trial for many years, and found that it not only fattens but is a preventative to disease, and in numbers of instances has cured disease.

The lecturer produced a skeleton of an ox's head and likewise the stomachs in a dried state, and very minutely described how digestion is performed in sheep and oxen. He then showed the philosophy of the poisonous effects of raw grain on animals. The injurious effects are produced by the formation in the stomach of sulphuretted hydrogen, which is most fatal to the system by deoxydizing the iron of the blood, breaks up the corpuscles, the conveyors of oxygen, supplants the oxygen and forms the black surphuret of iron, and thus destroys the vitality of the blood, and ultimately the animal. The same gas is generated in the stomach of horses when they have been eating wheat, and the consequence is that it proves fatal. An experiment of this gas—sulphuretted hydrogen—was shown with its effect upon some bullock's blood; the fearful stench arising from this gas is well known to persons who live in the vicinity of ill-drained premises or stagnant cesspools, and the "scent" on the present occasion was so dreadful that it was as if all the "fugoes" and cesspools of Castle Street were impersonated and had paid a special visit to the Hall at that time. Many persons were compelled to leave the room, and consequently caused no little confusion. The lecturer then proceeded:—Feeling the immense importance of the subject I have placed myself in communication with the Chancellor of the Exchequer relative to the Excise restrictions, in two letters, embodying the views which I have here endeavoured to give expression. To the first I received the following reply—

"11, Downing Street, Whitehall;
"*Jan.*, 1866.

"Sir,—I am directed by the Chancellor of the Exchequer to acknowledge the receipt of your letter of the 6th instant, and I am to state that he has no reason to believe that the rules in force, which depend on an Act of Parliament, unduly restrict the use of malt as food for cattle.—I am, sir, your obedient servant,

"Wm. B. Gurdon.

"Isaac Seaman, Esq."

To the second I received the following reply—

"11, Downing Street, Whitehall;
"*Feb. 22nd*, 1866.

"Sir,—I am directed by the Chancellor of the Exchequer to acknowledge the receipt of your letters of the 6th and 18th instant, and I am to remind you that the requirements as to grinding, which were deemed necessary in the introduction of the measure about which you write, have been considerably modified, if the malt and linseed are now allowed to be crushed or ground; and a much less degree of fineness is not now objected to, provided the ingredients are so mixed as to make it impracticable to separate them. To allow the malt to be used without being first ground or crushed would expose the revenue to serious risk; and her Majesty's Government could not propose to allow malt to be carried to the stage you suggest for feeding purposes.—I am, sir, your obedient servant,

"Wm. B. Gurdon.

"I. Seaman, Esq."

It appears to me that it ought to be the business and duty not only of the producer but of every meat consumer to agitate this question, and bring such a pressure upon the Chancellor of the Exchequer that he shall be obliged to permit the meat producer to prepare in his own way those foods for his cattle which a beneficent Providence has given for his use; and if this cannot be accomplished without a repeal of the malt tax, this obnoxious tax must be repealed; for merely fiscal measures can never be permitted to a question so vital as an adequate supply of necessary food to our working population. I have purposely abstained from alluding to the malt tax in its other injurious and obnoxious aspects, but upon the ground that I have chosen parties of all shades of politics may be asked to unite in its removal; if, as the Chancellor asserts, the restriction necessary to ensure its due assessment

and collection involved the prohibition of the use of the most wholesome, cheapest, the best, and the quickest meat producing food that the stock-rearer has at his command. The lecturer showed by a diagram that—

600 pounds of meat from 1 ton of saccharised grain = £20.

Cost :—Raw grain, £8 ; attendance, £6 ; balance (gain), £6 ; total, £20.

The chairman, after an appropriate speech, presented the thanks of the meeting to Mr. Seaman for his able lecture.

There was a very fair attendance.

ORDER IN COUNCIL.

At the Court at Windsor, the 9th day of May, 1866.
Present : Her Most Gracious Majesty in Council.

Whereas by an Act passed in the present session of Parliament, intituled "An Act to amend the law relating to contagious or infectious diseases in cattle and other animals," it is, amongst other things, enacted, that it shall be lawful for Her Majesty, by Order in Council, from time to time to continue, or to renew, if expired, all or any of the provisions, in the first part of that Act contained, for such time as shall be specified in such Order.

And whereas it is provided in the eleventh section of the said Act, which section is in the first part thereof, that Part I of the said Act shall continue in force until the fifteenth day of April, one thousand eight hundred and sixty-six, and no longer, unless continued or renewed by Order of Her Majesty in Council.

And whereas it is provided in the twelfth, thirteenth, fourteenth, fifteenth, and sixteenth sections of the first part of the said Act as follows :—

Slaughter of Diseased Animals.

"12. Every local authority shall cause all animals affected with the cattle plague within its district to be slaughtered, and shall, by way of compensation for every animal so slaughtered, pay to the owner thereof such sum not exceeding twenty pounds, and not exceeding one half of the value of the animal immediately before it was affected with the cattle plague, as to such local authority may seem fit.

"13. Every local authority shall cause every animal that has died of cattle plague, or has been slaughtered in consequence of being affected with cattle plague within its district, to be buried as soon as possible in its skin in some proper place, and to be covered with a sufficient quantity of quicklime or other disinfectant, and with not less than six feet of earth.

"14. Every local authority shall, within its district, cause the

yard, shed, stable, field, or other premises in which any animal affected with cattle plague has been kept while affected by the disease, or has died or been slaughtered, to be thoroughly cleansed and disinfected, and all hay, straw, litter, dung, or other articles that have been used in or about any such animal to be burnt or otherwise destroyed; and no fresh animal shall be admitted into any yard, shed, stable, field, or other premises in which any animal affected with cattle plague has been kept while affected by the disease, or has died or been slaughtered, until the expiration of thirty days after the cleansing and disinfecting of such premises in pursuance of this Act; and every local authority shall direct the disinfecting the clothes of, and the use of due precautions by inspectors, cattle overseers, and others in contact with animals affected by the cattle plague, with a view to prevent the spreading of contagion.

"15. A local authority may, if it thinks fit, cause to be slaughtered any animal that has been in the same shed or stable, or in the same herd or flock, or in contact with any animal affected with cattle plague within its district; and the owner of any animal so slaughtered may either dispose of the carcase on his own account, with a licence from some officer appointed in that behalf by a local authority, or may require the local authority to dispose of the same, in which case such local authority shall pay to the owner thereof, by way of compensation, such sum, not exceeding twenty-five pounds, as may equal three-fourths of the value of the animal slaughtered: Provided always, that the Lords of Her Majesty's Most Honorable Privy Council, or any two or more of them, may reserve animals (ordered to be slaughtered as aforesaid) for the purpose of experimental treatment.

"16. The Local Authority may require the value of any animal slaughtered under this Act to be ascertained by Officers of the Local Authority, or by arbitration, and generally may impose conditions as to evidence of the slaughter and value of the animals slaughtered: Provided that no compensation shall in any case be paid in respect of any animal found affected with cattle plague in a market or on a highway, or in respect of any animal which has been moved or otherwise dealt with in contravention of this Act, or any Order of a Local Authority made in pursuance thereof."

And whereas by an Order of Her Majesty in Council, bearing date the ninth day of April, one thousand eight hundred and sixty-six, the provisions of the above recited sections of the first part of the said Act were continued in force beyond the said fifteenth day of April, one thousand eight hundred and sixty-six, and until the tenth day of May, one thousand eight hundred and sixty-six; and whereas it is considered expedient that the same be further continued:

Now, therefore, Her Majesty, in exercise of the power vested in Her by the said Act, and by and with the advice of Her Privy Council, is pleased to order, and it is hereby ordered, that the said recited provisions contained in the twelfth, thirteenth, fourteenth, fifteenth, and sixteenth sections of the first part of the said Act

shall continue in force on and after the said tenth day of May, one thousand eight hundred and sixty-six, until the thirtieth day of June, one thousand eight hundred and sixty-six.

ARTHUR HELPS.

ON THE NATURE AND COMPOSITION OF FOOD.

By LYON PLAYFAIR, C.B., LL.D.

From "Good Words."

(*Concluded from* p. 300.)

It would be considered a folly for any man to undertake the direction and application of an engine, with the structure and working of which he is entirely ignorant. The body of a man is a far more complex and wonderful machine than any steam engine, and it is the duty of each man to preserve it in the best working order, and to apply it to the best purposes. But our systems of education do not include any provision for his acquaintance with this machine, so that it is not surprising that it frequently gets out of order. The science which professes to study the workings of the animal body is termed physiology, and, though still in its infancy, has already large proportions. Our present purpose is merely to take from its book of knowledge a single leaf, on which Liebig and other eminent chemists have written, and to explain what they have told us in regard to food.

Here we must again draw attention to the point in which our comparison of the steam engine with the animal body failed. In the case of the former, the material of which the engine is constructed is entirely different from the fuel applied to it; in the case of the animal the very structure itself is furnished by the food; and as the body is constantly wasting so must it be constantly supplied. We must, therefore, expect to find in food two classes of ingredients:—(1) those required to build up the fabric of the body; (2) those necessary for the support of animal heat. Our attention will be, in the first place, confined to what may be called the structural part of food.

Beccaria, in 1742, asked, "Is it not true that we are composed of the same substances which serve as our nourishment?" and George Herbert expresses the same idea when he writes—

> "Herbs gladly heal our flesh because that they
> Find their acquaintance there."

In all kinds of vegetable food capable of affording nutrition there are certain substances which are not only like, but essentially the same in composition as the principles of which the animal body consists. The albumen of the white of egg is equally found in the cabbage; the fibrin, which forms an important part of blood and the chief part of flesh, abounds in wheaten flour and in the cauliflower. The casein or cheese which is obtained from milk is present still more abundantly in peas and beans, from which the Chinese in reality extract it and make cheese for sale. So that if we were to take any of these principles from vegetables, or from the flesh or blood of animals, and place them in the hands of the most skilful chemical analyst, he would not only be unable to distinguish those of vegetable from those of animal origin, but he would find it difficult, by composition merely, to separate one principle from another, all having the same ingredients in almost the same proportions. They contain, besides sulphur, four organic elements, viz., Carbon, Hydrogen, Oxygen, and Nitrogen, in such proportion that the following composition in 100 parts would fairly represent them all, except, perhaps, Fibrin:

Carbon . . .	5·38
Hydrogen . . .	7·0
Nitrogen . . .	15·7
Sulphur . . .	1·2
Oxygen . . .	22·3
	100·0

Better numbers than these could scarcely be given for the organic portion of flesh or of blood free from fat.

With these facts before us, the nutrition of an animal is easily understood. Animals find the materials for their structure already elaborated by vegetables, and have nothing to do but to give them a place and form in their organism. As the builder finds the bricks supplied to his hand, and only requires to fashion them in order, so the animal has nothing whatever to do with the formation of structural materials, but has only to arrange them so as to carry out the design of the great Architect who created his body. No one finds it difficult to understand how a carnivorous beast receives the materials for its frame. It eats the flesh, blood, and bone of its prey, and merely rearranges them in its own system; in a chemical sense it eats itself. A suckling child is also carnivorous; it is a young cannibal, feeding upon its mother, and applying part of her body to its own uses. Equally

simple is the nutrition of the vegetable-feeder, who finds all the materials of its structure ready prepared in plants, and has nothing to do with their elaboration, but only with their application.

As flesh-feeders live upon vegetable-feeders, the primary source of all animal frames resides in plants, which form the only laboratory for the preparation of the structural materials of animals. All this has been arranged with infinite foresight by the Creator; for animals, in the execution of their higher functions, such as locomotion, volition, mechanical and mental work, could not expend their vital agencies in elaborating materials for their bodies out of unlike matter. Plants execute this work for them so completely that animals have nothing to do but to build the ready-formed materials into their frame. A convenient name for this class of structural materials is that of *flesh-formers*, and by that term we include them all, whether they be of vegetable or animal origin.

(*To be continued.*)

RESUSCITATION OF ANIMALS.

Dr. Richardson has recently communicated to the Royal Society a very remarkable memoir on the possibility of restoring the life of warm-blooded animals, in certain cases, when the respiration, circulation, and ordinary manifestations of organic motion are exhausted or have ceased. The object of the inquiry was to discover the best means to be adopted for fanning into active life the animal fire which is expiring but is not suspended; and, secondarily, to solve the question whether animal combustion cannot be re-established when it appears to have been extinguished; and whether so-called vital activity would not be spontaneously manifested upon such re-establishment of animal combustion. The author is led to the conclusion, which he thinks admits of direct demonstration, that artificial respiration, in whatever way performed, is quite useless from the moment when the right side of the heart fails in propelling a current of blood over the pulmonic circuit, and when the auriculo-ventricular valve loses its tension on contraction of the ventricle. Only is artificial respiration useful when the blood from the heart is being still distributed over the capillary surface of the lungs. The process is simply one of fanning an expiring

flame, which once expired will not, in spite of any amount of fanning, re-light. The further conclusion to which he is led goes, however, beyond the process of artificial respiration Returning again to the same simile, Dr. Richardson ventures to report that, even when the heart has ceased to supply blood to the pulmonic capillaries, during the period previous to coagulation, the blood may be driven or drawn over the pulmonic circuit, may be oxidized in its course, may reach the left side of the heart, may be distributed over the arteries, and that thus distributed it possesses the power of restoring general muscular irritability and the external manifestations of life. Hence he infers that resuscitation, under the limitations named, is a possible process, and that it demands only the elements of time, experiment, and patience for its development into a demonstrable fact in modern science. We have not space to follow Dr. Richardson through the systematic series of experiments which led to this result; but we may add that the present memoir is preliminary, and that he promises to return with sure results, which are in the course of development. One very remarkable circumstance may be recorded, which, in the author's words, is as follows:—"Since this paper was laid before the Society I have determined, by a direct experiment, that *rhythmic stroke* is of the first importance (in artificial respiration) for restoring muscular contraction. By means of a machine, which can be worked either by the hand or electromagnetism, I was enabled, assisted by my friends Drs. Wood and Sedgwick, to introduce blood heated to 90° Fahr. into the coronary arteries of a dog by rhythmic stroke, and at the same rate as the stroke of the heart of the animal previously to its death. The result was that in one hour and five minutes after the complete death of the animal, its heart, perfectly still, cold, and partly rigid, relaxed, and exhibited for twenty minutes active muscular motion, auricular and ventricular. The action, which continued for a short time after the rhythmic injection was withheld, was renewed several times by simply re-establishing the injection."—*The Quarterly Journal of Science.*

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

OBSERVATIONS ON A MALADY IN SHEEP AND GOATS ANALOGOUS TO THE RINDERPEST, CAUSED THROUGH INFECTION FROM ANIMALS OF THE BOVINE SPECIES AFFECTED WITH THIS PEST.

By Professor Röll, of the Veterinary Institute, Vienna.

(*Continued from* p. 427.)

IV.—*West Galicia.*

Though the development of the sheep pest was not observed to have originally depended upon the transmission of the infection from diseased cattle, the outbreak which followed in the month of November, 1863, in the district of Sandecer, was proved to be the rinderpest retransmitted by sheep. The information on this is as follows:—The rinderpest broke out in five different places after the purchase, at a cattle fair, of thirty-four sheep, some of which were affected with the disease. These sheep were distributed among the flocks of different places, where they imparted the rinderpest and infected the cattle. The vendor had brought these sheep from the frontier of Hungary, where the rinderpest prevailed at the time. The malady was consequently either caused by the communication with Hungary or it had been smuggled in over the frontier.

V.—*Military Frontier.*

In the Imperial military commands of Agram, consisting of ten regiments, during the prevalence of the rinderpest, in the first, second, third, fourth, and tenth frontier regiments, located in several of the rinderpest-infected places, a similar malady prevailed among the sheep, and in two, the fourth and tenth regiments, the same disease prevailed among the goats.

In the whole frontier commands 2074 sheep were attacked; of which 575 recovered, 1438 died, 22 were killed infected, and 39 remained sick at the end of 1863. Of goats, 113 were attacked, 24 recovered, and 89 died. The recoveries in the sheep were 27·7 per cent.; in the goats, 22·6.

Here also the sheep and goat pest appeared only in those

localities which were suffering from the rinderpest, and its transmission and retransmission were also clearly established.

The symptoms and *post-mortem* appearances, were in nowise different from those we have repeatedly described. In some places the rinderpest did not break out until after the sheep which had been brought into the infected district had become affected.

Of this there was a remarkable instance at the station of the tenth frontier regiment. In a completely isolated shed, containing four cows and two calves (*Mürzthaler Race*), the rinderpest broke out on the 12th of May, in consequence of a lamb, which had been bought on the 27th of April, having been put in the same shed, and which, after an attack of the sheep pest of about five days' duration, died on the 9th of May.

The goats were infected only in one of the three military frontier stations, and this through being milked by people who had been in contact with cattle infected with the rinderpest.

VI.—*Lower Austria.*

During the prevalence of the rinderpest in the summer and autumn of 1863, the sheep pest followed in four of the infected villages, but only in two were the losses considerable. The symptoms were—fever, discharge from the nose, increased respiration, cough, and diarrhœa. On dissection of the dead the same morbid lesions were found on the mucous membranes as already reported, but not the lobular inflammation of the lungs. In one of the villages, out of 430 sheep (the number kept), 315 became affected, from which 212 recovered (over 69 per cent.); but towards the end the results were not quite so favorable.

With the virus taken from one of the infected goats in the village, inoculations were performed at the Imperial Veterinary Institute, the results of which will be given hereafter.

VII.—*Transylvania.*

From the report of this Crown-land, where the rinderpest broke out in 1863, in one village only, Bölön, it was followed by the same malady amongst the goats. In this case, the number of these animals being four hundred and eighty, 167 became affected, 155 either died or were killed, and only 12 recovered, which makes it a little above 3 per cent. This is a great discrepancy compared to that which obtained in Carniola.

VIII.—*Hungary.*

It was only towards the end of 1861 that a malady analogous to the rinderpest was observed among the sheep in a village named Ercsi, in the Comitate of Weissenburg. These sheep were kept under the same roof with horned cattle affected with rinderpest. Professor Dr. Galámbos was the first who observed it, and afterwards it was repeatedly observed by Professor Zlámal. Since that time the malady has appeared extensively in Gomörer, Börsoder, Pressburger, Barser, and Zaláer Comitate, and also in the free town of Kesmark.

Although I have not at my command all the particulars of the animals which were attacked, the circumstance that in Gömörer and Börsoder alone it caused a loss of 4114 head up to January, 1864, shows how extensively it must have prevailed.

In some of the places in the Comitate of Gömörer, the cause of it was attributed to depasturing the sheep on meadow-land where cattle had been, which were infected with the rinderpest; in others the sheltering of sheep under the same roof with rinderpest-infected cattle. It was also an established fact that persons who had attended the diseased sheep had communicated the rinderpest to horned cattle.

The symptoms described were as follows. The animals at first were restless, the eyes bright, the mucous membrane of the nose and mouth dry, the pulse and respiration increased, diminution of the appetite, the sick remained behind the flock. These symptoms lasted on an average two days, after which the secretion of the eyes increased, there was a mucous discharge from the nose and of saliva from the mouth, the appetite was completely lost, rumination suspended, frequent tenesmus, with a discharge of thin, slimy fæces mixed with blood. The animals were constantly lying down; in about four days from the beginning of the attack death took place; recovery occurred only in a few cases.

On the section of the carcasses the heart and lungs were normal; the three first stomachs contained some fluid ingesta, the epithelium of the third or *omasum* came off easily, the mucous membrane of the fourth stomach, *abomasum*, was of a dark red colour, much softened, and towards the pylorus covered with numerous ulcers. The outside of the small intestines was of a purple colour, the mucous membrane was reddened and easily detached; the contents were of a thin, slimy character, mixed with blood. The large intestines were normal, the liver and the kidneys also normal, the gall-bladder filled with dark bile and much distended.

The flocks of the free town of Kesmark became infected by being depastured on meadow-land with a herd of oxen affected with the rinderpest. The symptoms described were as follows. Decrease of temperature, principally about the extremities; restlessness, debility, cessation of rumination, increased thirst, redness of the membrane, and afterwards abundant secretion of mucus from the nose, increased respiration, dry cough, thin and finally bloody alvine evacuations. The section of the carcasses showed the following appearances. The mucous membrane of the nose and mouth strongly injected, eroded in parts, and coated with a yellowish-brown exudation, that of the larynx and windpipe swollen and of a dark red colour, streaked with extravasation and covered with a yellow layer of exudation; the lungs, in a few cases, œdematous; the heart softened, its cavities filled with soft coagulated blood; no alteration in the pericardium. In the omasum soft ingesta existed, the mucous membrane was injected, and that of the abomasum swollen and of red-purple colour, ecchymosed here and there, particularly towards the pylorus, where there were also perceived some excoriated spots. The mucous membrane of the small intestines dark-red, and coated in some places with loosely adhering exudations, that of the large intestines presented similar alterations; their contents were of a thin fluid character and had a fetid odour; the liver was of a pale yellow colour; the gall-bladder distended, its mucous membrane swollen and spotted with red; the spleen was normal.

IX.—Observations relative to other Countries.

1*st. The Turkish Provinces.*

At the end of the year 1862 and the beginning of 1863 it was repeatedly stated in the consular reports of Turkish-Bosnia and Herzegowina that in those provinces where the rinderpest made great havoc a most fatal disease also prevailed amongst the sheep and goats. At first the disease was mistaken for anthrax, but afterwards, by Austrian veterinary surgeons who had been sent from the military command of Agram, it was declared to be the sheep-pest, and to be caused by the contagion of the rinderpest. A more accurate description of it has not reached us.

2*nd. Kingdom of Poland.*

The facts collected here on the sheep-pest are to be found in the State papers at the College of Medicine, under the

report of the State Commission for the Affairs of the Interior,* From these official documents we learn that at the end of the winter of 1862, the rinderpest was introduced from Russia into the district of Lomzyner, kingdom of Poland, and that in a short time after, a similar malady broke out amongst the sheep in some of the infected districts, the resemblance of which to the rinderpest was pointed out by Budzinski, veterinary assessor of the district of Augustova.

For the purpose of a closer inquiry into these hitherto (in Poland) unknown facts, the Government Commission for the Affairs of the Interior sent H. P. Seifmann, Veterinary Professor of Warsaw, into the district of Lomzyner to investigate the matter, and ascertain whether this malady in the sheep was caused by the prevailing rinderpest, and whether it was transmittible from cattle to sheep, and *vice versâ*, and in case of the affirmative to suggest the means of prevention.

The information from M. Seifmann forms the principal part of the report. First, it was ascertained that the malady amongst the sheep was undoubtedly the rinderpest. The course of the malady amongst the sheep was in some cases from six, seven, to eight days, but the majority died from the second to the fourth day subsequently to the time of the invasion. The symptoms of the disease were prostration, diminution of the appetite and rumination; at times increased, at others decreased thirst, increased and difficult respiration, sometimes cough. These symptoms increased with the progress of the malady, the loss of appetite and rumination became total, the respiration accompanied with grunting, the emaciation became visible, and generally on the second day an abundant discharge from the eyes, nose, and mouth set in. On the mucous membrane, particularly on that of the mouth and gums, the well-known erosions were found; and mostly, even at the beginning of the attack, an offensive-smelling diarrhœa set in; grinding of the teeth was also present in most cases. The malady generally terminated fatally by the aggravation of the intensity of these symptoms. In those cases which recovered the convalescence occupied some time.

(*To be continued.*)

* Wladomosc o wypadkach udzielania sie ksiegosuszu owcom, w. 2, 1863; w. Krolestwie Polskiem Warszawa, 1863.

ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL MEETING.

The Twenty-third General Meeting of the members of the Royal College of Veterinary Surgeons was held at the rooms of the College, 10, Red Lion Square, on Monday, May 7th. Professor Varnell, President, in the chair.

The following gentlemen were present:—Professors Spooner, Gamgee, and M'Call. The Principal Veterinary Surgeon to the Army, J. Wilkinson, Esq., and W. J. Goodwin, Esq., M.R.C.S. Also, Messrs. W. M. Ansell, G. Armitage, Jas. Allen, Thos. Aubrey, J. D. Barford, C. Barrow, H. T. Batt, W. C. Bland, T. P. Boughton, G. T. Brown, T. D. Broad, J. C. Broad, Jas. Brydon, Thos. Bunbury, Thos. Burrell, jun., Benj. Cartledge, W. Cawthron, Arthur Cherry, W. Cockburn, W. Dale, H. Dawson, C. Dayus, R. H. Dyer, W. B. Edmonds, W. Ernes, Ed. Ewing, W. Farrow, W. Field, jun., J. W. Gadsden, J. Gill, D. Gibbon, T. Goodall, T. W. Gowing, Thos. Greaves, Thos. Gregory, Jas. Hall, Ed. O. Harrison, M. J. Harpley, W. Helmore, R. L. Hunt, C. Hunting, W. Hunting, P. Irving, Fk. Jarvis, H. King, Jas. Law, J. Lawson, H. Lawrence, J. T. Lupton, W. Litt, C. Lowe, Rd. Mackinder, T. W. Mayer, Jas. Moore, Jas. Moore, jun., Robt. Moore, Jas. Moon, G. Morgan, Rupert Mosley, W. Partridge, Jn. Pile, C. Percival, C. Phillips, R. Poyser, Rd. Pritchard, W. Pritchard, W. Robinson, W. Rogers, Jas. Rowe, Alf. Rushall, Ic. Seaman, Chas. Secker, H. J. Simpson, F. R. Silvester, E. Stanley, F. T. Stanley, R. A. Stock, W. Thacker, O. Thomas, S. Tremlett, H. E. Wilkinson, W. Wilson, S. H. Withers, H. Withers, Josh. Woodger, Josh. Woodger, jun., Ed. Woodger, F. W. Wragg, and the Secretary.

The advertisement convening the meeting and the minutes of the previous General Meeting having been read, the Secretary read the Annual Report of the Council, as follows:

REPORT.

The Council has to report that, at its first meeting for the year, the following gentlemen were elected as officers of the College, viz.—Professor Varnell, President; Messrs. W. Burley, R. Lucas, W. Field, jun., W. Thacker, C. Hunting, and J. Rose, Vice-Presidents; Mr. S. H. Withers, Treasurer; and Mr. Coates, Secretary and Registrar.

At the first Quarterly Meeting of the year a communication from the Right Honorable the Secretary of State for the Home Department was laid before the Council. The

letter, bearing date the 29th May, 1865, enclosed a programme of the second International Veterinary Congress, which was to be held at Vienna in the month of August, and a further letter from the Austrian Ambassador, addressed to Sir George Grey, expressing a hope that her Majesty's Government would appoint delegates to attend the Congress. The Home Secretary requested to be informed if the Royal College of Veterinary Surgeons deemed it advisable to send a representative. The Council replied, stating its readiness to nominate one, should her Majesty's Government determine on sending a deputation to Vienna. No further communication, however, was received from the Home Department.

On the 21st August, 1865, a meeting was held under the sanction of the President, at the Royal College of Veterinary Surgeons, for the purpose of taking into consideration the duties devolving upon those members of the profession who had been appointed veterinary inspectors of the Metropolitan District in relation to the cattle plague. On this occasion a thousand copies of the County List of Members of the body corporate were ordered to be printed and circulated at the expense of the College amongst the civic authorities of the United Kingdom, in order that inspectors might be selected therefrom.

The subject of the 'Veterinary Medical Bill' has been duly considered, and the draft, as submitted to the profession in the Annual Report for the year 1863-4, been freely discussed. To carry out the views of the Council, the Parliamentary Committee was convened; and the Council, finding that there was considerable opposition to Clause IV of the draft, determined on obtaining the individual views of the members of the body corporate, and a circular letter was accordingly addressed to each. Based on the result of these replies, the Committee was directed, after consultation with the solicitor, to frame another Bill. This Bill, the proposed form of which is herewith submitted, the Council has approved, and considers, if it become law, that it will meet the requirements of the profession generally.

REASONS FOR A VETERINARY MEDICAL ACT.

The object of the proposed Veterinary Medical Bill is to protect the public and the profession from the deception of persons falsely calling themselves Veterinary Surgeons.

By the Royal Charter granted in 1844 by Her Majesty to "The Royal College of Veterinary Surgeons," it is provided that the Members of the corporate body should thenceforth be recognised as a profession, and should "*solely and exclu-*

sively of all other persons whomsoever be deemed and taken and recognised to be Members of the profession or professors of the said Art, and shall be individually known and distinguished by the name or title of Veterinary Surgeon."

Admission to the Corporate Body is obtained by examination, after a curriculum of study at the Royal Veterinary College of London, the Veterinary College of Edinburgh, or any other Veterinary College authorised as a school by the Queen's sign manual. In fact, the Royal Charter places the Veterinary Profession in the same position as the Medical Profession with regard to education and examination; but it requires to be supplemented by an Act of Parliament, in order to give practical effect to its provisions and to prevent those who are not Members of the Corporate Body from falsely so representing themselves. This is the simple scope of the proposed Bill.

The beneficial effects of the Charter have been lessened by the numerous uneducated persons who, in defiance of its provisions, practise under the name of Veterinary Surgeon.

By the passing of this Act the course prescribed by the Charter as necessary for the Veterinary Profession will be largely encouraged, to the manifest advantage of the country; whilst a longer continuance of the present system of toleration would hold out a premium to ignorance and incapacity.

It is considered that in the interest of the public, and in justice to the profession, no person shall be permitted to practise under a falsely assumed name or pretence of being a Veterinary Surgeon.

England is behind many other countries in not efficiently protecting Veterinary Education.

In France it is illegal for any one who has not obtained a diploma to assume the title of a Veterinary Surgeon.

In Belgium a law passed in 1850 prohibits any one from practising without a diploma.

In Holland a similar law is in force.

In Saxony it is provided that only those who possess diplomas shall treat the maladies of domestic animals.

In Bavaria no person can practise the Veterinary Art without a diploma.

In Baden also, and in the small states of the German Confederation, there are penalties against the unauthorised practice of the Veterinary Profession.

By order of the Council of the Royal College of Veterinary Surgeons.

(Signed) GEORGE VARNELL, *President.*
W. H. COATES, *Secretary.*

10, RED LION SQUARE, LONDON, W.C.
March, 1866.

PROPOSED FORM OF VETERINARY MEDICAL BILL.

WHEREAS, Her present Majesty, by Royal Charter, bearing date the 8th day of March, in the seventh year of her Reign, did for herself, her heirs and successors, grant unto Thomas Turner, and to certain other persons therein named, together with such others as then held Certificates of qualification to practise as Veterinary Surgeons, granted by the Royal Veterinary College of London, or by the Veterinary College of Edinburgh respectively, and such other persons as respectively then were and might thereafter become Students of the Royal Veterinary College of London, or of the Veterinary College of Edinburgh, or of such other Veterinary College, corporate or unincorporate, as then was or thereafter should be established for the purposes of education in Veterinary Surgery, whether in London or elsewhere in the United Kingdom, and which Her Majesty and her successors should under her or their sign manual authorise in that behalf, and should pass such examination as might be required by the orders, rules, and bye-laws which should be framed and confirmed pursuant to that Charter, should, by virtue thereof, be members of and form one body politic and corporate by the name of "The Royal College of Veterinary Surgeons," by which name they should have perpetual succession, and a Common Seal, with full power and authority to alter, vary, break, and renew the same at their discretion, and by the same name to sue and be sued, implead and be impleaded, and answer and be answered unto in every Court of Her Majesty, her heirs and successors, and be for ever able and capable in the Law to purchase, receive, and possess to them and their successors any goods and chattels or other personal property whatsoever, and should have full power and authority to sell and dispose of any goods and chattels or other personal property so to be by them acquired, and to act and do in all things relating to the said body politic and corporate as fully and effectually to all intents, effects, constructions, and purposes whatsoever, as any other of her Majesty's liege subjects, or any other body politic and corporate in Her Majesty's United Kingdom of Great Britain and Ireland, not being under any disability, might do in their respective concerns; and Her Majesty did further declare and grant that the Veterinary Art, as practised by the members of the said body politic and corporate, should be thenceforth deemed and taken to be and recognised as a profession, and that the members of the said body politic and corporate, solely and exclusively of all other persons whomsoever, should be deemed and taken and recognised to be members of the said profession or professors of the said

Art, and should be individually known and distinguished by the name or title of Veterinary Surgeons.

And in the said Charter were contained certain regulations for the conduct and management of the affairs of the said Corporation.

And whereas it is expedient to encourage the progress of the Veterinary Art, that such of Her Majesty's subjects as may from time to time require Veterinary Medical aid should be enabled to distinguish the members of the Royal College of Veterinary Surgeons from others who have not passed the examination requisite for entitling them to become members of the said College, and who are not members thereof:

BE IT ENACTED by the Queen's Most Excellent Majesty, by and with the advice of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

Short title. I.—This Act may, for all purposes, be cited as the Veterinary Medical Act.

Commencement of the Act. II.—This Act shall take effect from the First day of October, One thousand eight hundred and sixty-six.

Penalty for falsely using the title of Veterinary Surgeon. III.—Any person, not being a Member of the said Royal College of Veterinary Surgeons, who shall, after the time appointed for this Act coming into operation, take or use the name or title of Veterinary Surgeon, or who shall falsely represent himself to be a Member of the said College, or who shall use any other name or title with intent to lead, or whereby the public may be led to believe that he is a Member of the said Royal College of Veterinary Surgeons, shall, upon a summary conviction for any and every such offence, pay a sum not exceeding Five Pounds, nor less than Two Pounds.

Exemptions. IV.—Provided nevertheless that this Act shall not affect any person who shall have assumed the name or title of Veterinary Surgeon prior to the obtainment of the Charter of the Royal College of Veterinary Surgeons.

Recovery of Penalty. V.—Any penalty to which, under this Act, any person is liable on summary conviction of any offence, may be recovered as follows (that is to say): in England, in the manner directed by the Act of the Session holden in the eleventh and twelfth years of Her Majesty, Chapter XLIII; and in Ireland, in manner directed by the Petty Sessions (Ireland) Act, 1851; or any other Act for the time being in force in England and Ireland respectively for the like purposes. And any such penalty may, in Scotland, be recovered by the Procurator-Fiscal of the county, or by any other person, before the Sheriff or two Justices, who may proceed in a summary way, and grant a warrant for bringing the party complained against before

him or them, or issue an order requiring such party to appear on a day, and at a time, and place, to be named in such order; and every such order shall be served on the party by delivering to him in person, or by leaving at his usual place of abode, a copy of such order and of the complaint whereupon the same has proceeded; and upon the appearance or default to appear of the party, it shall be lawful for the Sheriff or Justices to proceed to the hearing of the complaint, and upon proof or confession of the offence, the Sheriff or Justices shall, without any written pleadings or records of evidence, commit the offender, and decree him to pay the penalty named, as well as such expenses as the Sheriff or Justices shall think fit; and failing payment, shall grant a warrant for the recovery thereof by pounding and imprisonment, such imprisonment to be for such period as the discretion of the Sheriff or Justices may direct (not exceeding three calendar months), and to cease on payment of the penalty and expenses.

Application of Penalties.

VI.—Any sum or sums of money arising from conviction, and recovery of penalties as aforesaid, shall be paid to the Secretary for the time being of the said Royal College of Veterinary Surgeons, for the use of the aforesaid College.

The Council is also in a position to state that the Bill is now in the hands of two Members of the House of Commons, on whose strenuous support and exertions the profession may rely.

Considerable and very valuable additions have been made to the Library of the College, the principal donors being Mrs. Gabriel, Dr. Taylor, Mr. Joseph S. Gamgee, and Professors Simonds, Morton, Varnell, and John Gamgee. A very valuable presentation has likewise been made by Professor Morton, consisting of specimens of drugs used in Veterinary Materia Medica. A case of dental instruments, together with three works, have also been presented by Mr. Gowing.

The Council cordially agreed to a proposal which emanated from Professor Varnell of establishing periodical lectures to be delivered at the Royal College of Veterinary Surgeons. Professor Simonds kindly undertook to begin the series with a lecture on the cattle plague, which afforded an indication of the great advantages to be derived from the system now happily inaugurated by our President. The limited space in the College at the disposal of the Council led to the lecture being delivered at the Freemasons' Hall.

A large number of the members of the medical and veterinary professions accepted an invitation to a *conversazione* given by the President. The works of art and scientific specimens exhibited were numerous and highly interesting.

Sixty-six pupils from the schools have received the diploma of the Royal College of Veterinary Surgeons during the year.

The number of deaths reported since April, 1865, has amounted to forty-three.

The Council has to regret the loss of a member of the Court of Examiners, in the death of Professor Brande, Examiner in Chemistry, who held the position for a period of twenty years, during a great portion of which he also fulfilled the duties of chairman.

The Council has the satisfaction to announce that the vacancy thus caused as Chemical Examiner is filled by Dr. Miller, of King's College.

It is with sincere regret that the Council has to announce the death of Professor Dick, the founder of the Edinburgh Veterinary College. His diploma bears date 1818; since that period he has devoted all the talents and extraordinary industry with which nature had endowed him in the formation of a school, which has done much for veterinary science in this country. Professor Dick was for many years co-editor of the *Veterinarian* with Mr. Youatt; he was also author of the article on "Veterinary Science" in the *Encyclopædia Britannica*. He was one of the supporters in the obtainment of the Charter of this College, and, though circumstances led to his estrangement shortly after the body corporate was formed, many of his students are enrolled on the list of members.

The loss of Mr. Edward Braby is also deeply to be deplored, from the active interest he always manifested in the affairs of the Council, of which he had been a member since the institution of the Royal College. For five years he held office as Treasurer, and for one acted as Honorary Secretary.

The Treasurer's Report, herewith annexed, shows a balance in hand of £463 17*s*. 11*d*.

Before closing the duties of the present session, the Council decided upon the publication of a new Register, with a view to afford the public the most recent and accurate information regarding the members of the profession.

It was moved by *Mr. Cherry*, and seconded by *Mr. Dray*—

"That the Report be received."—Carried.

It was then moved by *Professor Spooner*, and seconded by *Mr. Gowing*—

"That the Report of the Council of the Royal College of Veterinary Surgeons, including the Treasurer's Annual Balance Sheet, be adopted."

S. H. WITHERS, *Treasurer, in Account with the Council of the Royal College of Veterinary Surgeons.*

APRIL, 1866.

Dr.

	£	*s.*	*d.*
Balance at Bankers', April 1865	423	8	2
Examination Fees	588	0	0
Interest	7	18	6
Income Tax returned	1	0	0
	£1020	6	8

Cr.

	£	*s.*	*d.*
Examiners' Fees and Expenses	273	0	6
Rent	60	0	0
Rates and Taxes	29	14	10
Salary to Secretary	50	0	0
Insurances	3	6	6
Advertisements	9	14	0
Printing	26	17	6
Stationery and Stamps	28	19	0
Coals, Gas, and Wood	12	4	6
House and Furniture Repairs	12	0	3
Medical Cabinet and Fittings	9	15	4
Museum	0	14	4
Library	0	13	0
Wages	20	0	0
Petty House Expenses	19	9	0
Balance at Bankers'	463	17	11
	£1020	6	8

We, the undersigned, have examined the above accounts, and found them correct,

April 10*th*, 1866.

CLEMENT LOWE,
WILLIAM FARROW, } *Auditors.*

An amendment was then made by *Mr. T. W. Mayer*, and seconded by *Mr. Cherry*—

"That the Report be referred to the Council for reconsideration."

The amendment was lost, and the original motion carried.

The meeting was addressed by the President, Professors Spooner and Gamgee, Messrs. Ernes, Goodwin, Helmore, Mayer, Lupton, and Wilkinson.

The election of seven members of Council, six in the place of the following gentlemen, who retire by rotation, viz., John Wilkinson, W. H. Coates, T. D. Broad, C. Spooner, W. Robinson, and J. B. Simonds, and one in the place of E. Braby, deceased, was then proceeded with. The following gentlemen were proposed :

Mr. Hunting, by Mr. Cartledge.
„ Goodwin, by Professor Spooner.
„ Thacker, by Mr. Partridge.
Professor Spooner, by Mr. Robinson.
Mr. Coates, by Mr. Silvester.
„ Broad, by Mr. Ernes.
Professor Simonds, by Mr. Dray.
Mr. Field, by Mr. Harpley.
„ Dray, by Professor Spooner.
„ J. C. Broad, by Mr. Wilkinson.
„ Wilkinson, by Mr. Secker.
„ E. Stanley, by Mr. Pritchard.
„ Lupton, by Mr. Brown.
„ Robinson, by Mr. Mayer.
„ W. Pritchard, by Mr. Gowing.
„ Wheatley, by Mr. Pritchard.

Mr. E. Woodger and Mr. C. Percival were appointed scrutineers.

The ballot having been taken, presented the following report of the numbers.

Mr. J. Wilkinson .	69	Mr. W. Thacker .	22
„ W. Robinson	61	„ W. J. Goodwin	13
Professor Spooner	54	„ E. Stanley .	13
„ Simonds	49	„ W. Field .	12
Mr. W. H. Coates	47	„ E. C. Dray .	11
„ C. Hunting .	33	„ W. A. Wheatley	10
„ T. D. Broad .	32	„ W. Pritchard	9
„ J. T. Broad .	24	„ J. J. Lupton .	7

The President declared the election to have fallen on Messrs. J. Wilkinson, W. Robinson, C. Spooner, J. B. Simonds, W. H. Coates, C. Hunting, and T. D. Broad.

It was next decided *by lot* that Professor Simonds should take the place of Mr. Braby, deceased.

On the motion of *Mr. Ernes,* seconded by *Professor Gamgee,* a vote of thanks was unanimously awarded to the *President* for the able manner in which he had performed his very arduous duties, especially in reference to the Veterinary Medical Bill.

The President having acknowledged the above, the meeting terminated.

SPECIAL MEETING OF THE COUNCIL, HELD MAY 15TH, 1866.

PRESENT :—Professors Spooner, Simonds, Varnell, and Gamgee, Messrs. Brown, Greaves, Harpley, Harrison, Hunt, Hunting, Lawson, Moon, Silvester, Wilkinson, Withers, and the Secretary.

Professor VARNELL in the Chair.

The minutes of the preceding meeting were read and confirmed.

The Secretary informed the Council that he had been in communication with Dr. Struthers, of Aberdeen, relative to the "Veterinary Medical Act." He then proceeded to read extracts from several letters received from that gentleman bearing upon the subject.

After a considerable discussion,

It was moved by *Professor Gamgee,* and seconded by *Professor Simonds*—

"That the letters now read be entered on the minutes."—Carried.

The election of a President for the ensuing year was then proceeded with, when it was moved by *Mr. Wilkinson* and seconded by *Mr. Hunt*—

"That Mr. John Lawson be elected President."

On the ballot being taken, Mr. Lawson was declared unanimously elected.

Mr. Lawson having taken the chair, returned thanks for the honour of his election.

It was moved by *Mr. Silvester,* and seconded by *Professor Gamgee*—

"That a vote of thanks be given to the late President, Professor Varnell, for the very able and efficient manner in which he had discharged the onerous duties of his office during the past year."—Carried unanimously.

Professor Varnell returned thanks, and handed to the President elect the key of office.

The election of six Vice-Presidents was then proceeded with. The following gentlemen were proposed:

Mr. W. Thacker, by Mr. Wilkinson.
„ W. J. Goodwin, by Professor Spooner.
„ W. Field, jun., by Mr. Harrison.
„ J. C. Broad, by Professor Gamgee.
„ T. W. Gowing, by Professor Varnell.
„ W. Burley, by Mr. Robinson.
„ E. C. Dray, by Professor Simonds.
„ Jas. McCall, by Professor Gamgee.
„ H. Wilkinson, by Mr. Greaves.
„ J. J. Lupton, by Mr. Brown.
„ J. R. Cox, by Mr. Silvester.

The result of the ballot showed that the choice of the Council had fallen upon Messrs. Field, jun., W. Burley, W. Thacker, J. C. Broad, W. Goodwin, and J. Gowing, whereupon the *President* declared these gentlemen duly elected as Vice-Presidents.

The election of a Secretary and Registrar was then proceeded with.

It was proposed by *Mr. Robinson*—

"That Mr. Coates be re-elected Secretary."

On the ballot being taken, Mr. Coates was declared to be unanimously elected.

It was then proposed by *Professor Simonds*—

"That Mr. Coates be re-elected Registrar."

On the ballot being taken, Mr. Coates was declared to be unanimously elected.

It was then proposed by *Professor Spooner*, and seconded by *Mr. Hunt*—

"That the appointment of Committees for the year be proceeded with."—Carried.

The Finance Committee to consist of Messrs. Wilkinson, Harpley, Harrison, Moon, Field, and Thacker. The House Committee to consist of Professor Spooner, Messrs. Mavor, Harrison, and Withers. The Registration Committee to consist of Messrs. Wilkinson, Ernes, and Professor Simonds. The Parliamentary Committee to consist of Professors Spooner, Simonds, Varnell, and Gamgee, and Messrs. Ernes, Field, Harpley, Harrison, and Robinson.

It was then moved by *Professor Gamgee*, and seconded by *Mr. Harpley*—

"That a special meeting of the Council be convened for

Monday, May 21st, to consider what steps shall be taken with reference to the Veterinary Medical Act."—Carried.

By order of the Council,

WM. HY. COATES, *Secretary*.

SPECIAL MEETING OF THE COUNCIL, HELD MAY 21ST, 1866.

PRESENT:—The President, Professors Spooner, Varnell, and Gamgee; Messrs. Broad, J. C. Broad, Field, Goodwin, Gowing, Harpley, Harrison, Moon, Wilkinson, Withers, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

The Secretary announced that he had communicated to the Vice-Presidents their election to that office, which was duly acknowledged.

The Secretary then read a letter he had received from Mr. Newdegate, M.P., respecting the Veterinary Medical Bill, in which that gentleman stated that he had much pleasure in consenting to have his name placed on the Bill in conjunction with Mr. Holland. He trusted that the future passage of the Bill through the House of Commons would be uninterrupted, and urged the necessity of being prepared in the House of Lords by requesting the support of some of the peers, and that Lord Redesdale's influence would be most valuable if he could be induced to take a favorable view of the Bill, for which Mr. Newdegate would be prepared to afford his lordship every information.

After a very considerable discussion—

It was moved by *Professor Gamgee*, and seconded by *Mr. Harpley*—

"That a deputation be appointed to confer with Mr Bruce, and Messrs. Holland and Newdegate, with regard to the Veterinary Medical Act now before the House."—Carried unanimously.

It was then moved by *Mr. Wilkinson*, and seconded by *Mr. Broad*—

"That the gentlemen whose names constitute the Parliamentary Committee form the Deputation."—Carried.

The Secretary was requested to write to Messrs. Bruce, Newdegate, and Holland, and ascertain when it would be most convenient for a deputation to wait upon them.

By order of the Council,

WM. HY. COATES, *Secretary*.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE quarterly meeting of this Society was held at the Red Lion Hotel, Pontefract, on April 11th ult. The chair was taken at 2 p.m. by the President, Mr. M'Taggart. There were also present Messrs. Patterson, Schofield, Anderton, Freeman, sen., Freeman, jun., Nicholson, Kay, Greaves, Naylor, Fallding, and Broughton. Messrs. Dray, Carter, Cuthbert, and the Secretary, were unavoidably absent. The three first named were engaged at the Leeds assizes, and the latter at the funeral of the late Professor Dick. Mr. Broughton acted as secretary, and at the conclusion of the preliminary business he was called upon to read his paper on the "Anatomy and Physiology of the Stomach of the Ox."

To the President and Members of the Yorkshire Veterinary Medical Society.

GENTLEMEN,—The attention of veterinary surgeons generally, during the last few months, having been directed to the investigation of the direful disease termed cattle plague, which has decimated the herds of cattle in this country, I thought it very opportune, at the present quarterly meeting, to introduce a subject to your notice appertaining strictly to the bovine tribe.

I regret to say that in very many districts, and particularly in large towns, veterinary surgeons have not given this class of our patients that due share of attention which they ought to have done; the consequence is that the treatment of the diseases of cattle too frequently remains in the hands of the cattle doctor and farrier.

I sincerely hope that, as our highly esteemed friend Professor Simonds has fairly launched us before the public, as the proper persons to treat the maladies of cattle, we shall endeavour to keep up and improve our knowledge of their diseases by the frequent introduction of papers upon this branch of our art before this society. The subject I have the honour to introduce to your notice to-day is the consideration of the anatomy and physiology of the stomach of the ox.

The ox is remarkable for having four stomachs; they all present distinctive features, whether viewed externally or examined internally. The first stomach, the rumen, is an exceedingly large viscus, occupying nearly three fourths of the abdominal cavity, principally on the left side; it extends from the diaphragm to the symphysis pubis, and from the spine to the floor of the abdomen. The rumen is attached anteriorly by double reflections of peritoneum to the diaphragm; superiorly it is attached to the spine, to the last rib, and dorsal vertebræ, also slightly to the left kidney, and is in contact with the left flank; inferiorly it rests upon the floor of the ab-

domen; the posterior portion hangs floating. It is divided into four compartments or pouches, viz., the anterior, middle, supero-posterior, and the infero-posterior. The anterior pouch is the largest, the middle lies underneath the anterior, and the others respectively behind these two. These pouches are separated from each other by strong muscular transversal bands, these bands being deflections of the muscular coat of the viscus; no papillæ are found existing upon these transversal bands, consequently no resistance is offered to the passage of the food from one pouch to the other; the papillæ vary in size, and are found the largest at the bottom of each compartment. These papillæ or scale-like projections are formed of mucous membrane covered by epithelium. The rumen is composed of three coats—peritoneal, muscular, and mucous. The muscular coat is composed mainly of two orders of fibres running longitudinally and transversely, whilst other fibres run obliquely, thus showing that this viscus is not merely a passive organ, but that it is in constant motion. The blood-vessels of the rumen are not very numerous, the arteries being derived from the splenics, which are of large size in the ox. The nerves supplying this viscus are given off from the cæliac plexus. There are two openings into the rumen, one at the termination of the œsophagus, the other communicating with the reticulum.

The reticulum, or second, is the smallest of the stomachs; it is globular in form, and is situated on the left and anterior portion of the rumen, underneath the œsophagus, and rests upon the abdominal portion of the sternum; its muscular coat, which is of great power, is composed of two orders of fibres running longitudinally and transversely; the mucous coat of this organ is similar to a rete or network, having the appearance of a honeycomb; this coat is very vascular, and is composed of a great number of pentagonal cells, along the base and sides of which are numerous minute papillæ that secrete a mucous fluid. The arteries and nerves of this stomach are derived from the same source as those of the rumen.

The omasum or manyplus, the third stomach, is curved upon itself; it is situated on the right and anterior portion of the rumen, and superiorly to the abomasum; it is less globular and larger than the reticulum; its anterior portion is in contact with the liver and the diaphragm, its posterior portion being in contact with the anterior compartment of the rumen. The walls of this viscus are comparatively thin, not having much muscular fibre entering into their composition. The internal formation of the omasum is very wonderful, the lining membrane being thrown into innumerable leaves or folds, hanging, as it were, from the whole of the mucous lining membrane. These leaves or duplicatures are formed of cellular tissue, blood-vessels, and, according to some authors, of a thin but powerful layer of muscular tissue. These leaves vary considerably in depth, there being a long one, and then the adjoining ones on either side gradually decrease in depth; the epithelial lining of these leaves is very dense, and thickly studded with little prominences, so that when a leaf is examined it exhibits a file-like hardness, and is evi-

dently formed to exercise a triturating process upon the food; the omasum is much more largely supplied with blood-vessels and nerves than the preceding stomach, the ramifications of the arteries being plainly observable in the leaves of the viscus.

The abomasum, or fourth stomach, is the true digestive stomach. It is of a cone-like form, and somewhat arched; it is situated obliquely to the left of the rumen, and to the right and in the rear of the omasum; it is divided into its two curvatures, the smaller one being in contact with the diaphragm, and the larger one lying against the rumen; its internal membrane is villous, and is thrown into rugæ; these rugæ run longitudinally in the anterior and middle portion of the viscus, but towards the posterior extremity they run transversely. At the entrance into the abdomen two rugæ, larger than the rest, are placed, in order to prevent the regurgitation of the ingesta. At the termination of the viscus is an enlargement termed by some the pyloric gland, which is made up principally of adipose, with a little muscular tissue; this substance, acting as a sphincter, prevents the ingesta flowing too quickly into the bowels; the internal coat of this viscus is thickly covered with mucus, whilst from innumerable glands are secreted the gastric juice or true digestive fluid.

Arteries, nerves, &c.—The arteries supplying the stomach are principally derived from the splenics, the abomasum receiving a twig or two from the anterior mesenteric; the motor-nervous power is derived from the pneumogastric or par vagum, which is also the sentient nerve; the sympathetic nerve supplies the necessary power in the function of digestion.

Before proceeding to consider the functions of these organs it is necessary that I should describe the anatomy of the œsophagus. This organ, which conveys the food from the pharynx to the stomach, extends from opposite the cricoid cartilage of the larynx, and is situated above the trachea, inclining in its passage downwards slightly to the left, passes through the first ribs, the superior mediastinum and the foramen cynistrum of the diaphragm. It now recedes from the spine and enters the supero-antero part of the rumen. This organ is composed mainly of muscular tissue, loosely imbedded in areolar tissue surrounding it. One set of its muscular fibres run circularly downwards, and the other set circularly upwards, decussating each other. The mucous coat of the œsophagus is studded with follicles secreting mucus, in order to facilitate the transit of the food through the tube. The sub-mucous tissue contains yellow elastic tissue, which has the effect of throwing the internal coat into folds. The œsophagus, as it travels through the chest, diminishes in size; but as soon as it enters the abdomen it increases in volume, and becomes more muscular, entering the rumen, as I have observed before, at its supero-antero part. The œsophagus now takes the name of the œsophagean canal, and extends through the rumen into the omasum and the abomasum. The floor of this canal is composed of two muscular pillars formed by duplicatures of the rumen and reticulum, the contractility of

these pillars, no doubt, being under the influence of the will. The roof of this canal is formed of a continuation of the œsophagus.

Having somewhat concisely drawn your attention to the anatomy of these organs, I will now proceed to speak of their several functions.

The ox possesses the singular property of masticating his food a second time. The animal having satiated his appetite, and the solid and more fibrous portion having fallen into the rumen, whilst most of the liquid parts will have travelled into the omasum, the desire to return the food into the mouth to be remasticated ensues. This second mastication, and the phenomena attending it, are known by the term rumination.

Rumination, then, may be stated as being an essential operation to the process of digestion in the ox; it is composed of a series of phenomena, the result of which is to convert the food into chyme. Ruminants consume their food somewhat greedily, and when it is swallowed in large bulk, and with some degree of force, it breaks through the œsophagean canal into the rumen. In the adult ruminant liquids mainly flow on to the abomasum, some slight quantity, no doubt, finding its way into the other stomach. In the young sucking ruminant the whole of the milk goes at once to the abomasum, as it requires no previous preparation. Previous to the animal having partaken of solid food the first three stomachs are very small compared with the fourth, which is largely developed. At that time the animal lives entirely on fluids; therefore it is fair to infer that, in the natural process of digestion, it was intended, as I have before said, for fluid to pass mainly to the abomasum.

Almost all the food contained in the rumen is returned into the mouth to undergo a more perfect mastication. In order to effect this a great concentration of vital power is required, and when this concentration is developed rumination is continued until the rumen has got rid of a considerable portion of its contents, but after the most perfect rumination it is found that a large quantity of food is still retained in the organ.

When the animal is disposed to ruminate it seems to experience a sort of drowsiness for a short time; this is followed by a short, sudden, and interrupted expiration; the inspiration being renewed, the animal elongates his neck, and the alimentary bolus may be seen remounting to the mouth, in order to be distributed among the molar teeth. Mastication immediately commences, and is continued until the food is sufficiently attenuated. In the ox, as in other animals, the posterior maxillary is the principal agent in attrition, its motion being from right to left, but rumination is often terminated by an inverse motion of the jaw, that is from left to right. This second mastication produces the alteration of the food in ruminants which is effected in the horse by one act; it causes an attenuation of the aliment, penetrates it with saliva, which is abundantly secreted during this second mastication; and when thus sufficiently prepared the bolus is again swallowed. The deglutition is succeeded by another supply of matter for rumination, which is operated upon in the same

manner, and is continued until the animal ceases to ruminate, or suspends the function for a time.

It is quite evident, I think, that a function so important and necessary as this is natural, vital, and subordinate to the influence of the nerves, the contraction of the parietes of the abdomen being assisted by respiration and the action of the abdominal muscles.

The drowsiness which the animal experiences is somewhat similar in appearance to what we feel when inclined to emit, by the mouth, gaseous matter that caused uneasiness or pain in the stomach. This indicates a concentration of the vital powers necessary to bring rumination into action. The strong inspiration determines the contraction of the diaphragm. This brings the cartilages of the ribs together, so as to give pressure on the abdominal viscera, which is also assisted by the contraction of the inferior abdominal muscles, raising the rumen and pressing it forward. In its backward convexity, in inspiration, the diaphragm presses on the contents of the abdomen, and helps to bring the walls of the rumen close to the œsophagean opening, as well as to the canal of the same name. The whole inferior and lateral surface of the rumen is pressed upwards and forwards by the contraction of the abdominal muscles; at the same time the muscular coat of the rumen is contracting with great energy and power. This contraction, however, seems to be very slow, but is facilitated by the inspiration, which is continued until the aliment is engaged between the lips that surround the insertion of the œsophagus into the rumen, and which are then more or less apart.

A portion of the aliment being grasped by these lips, the short and sudden expiration that follows allows the passage up it through the pillar of the diaphragm; at the same time, the neck being elongated, the œsophagus is drawn forward, the lips of the lower extremity are contracted and closely brought together by the arrangement of its muscular fibres, and the bolus arrives in the mouth. The principal agent in this operation is the contraction of the muscular coat of the rumen, without which rumination cannot take place. The abdominal muscles can only operate in determining it. This contraction, being formed in a regular and natural manner, the viscus is drawn together from different points, and is pressed forward.

In these remarks I have only considered the rumen; but the other three continuous viscera have likewise a greater or lesser degree of contraction taking place in them, and which forces out a portion of their contents. The reticulum empties part of its contents into the omasum, where it is sifted, as it were, so that the most fluid portions flow into the abomasum, while the fibrous ingesta are retained between the lamellæ of the omasum. These substances being compressed between the lamellæ and moistened by the fluid secreted by the inner coat of this viscus, and more or less changed and assimilated, successively pass into the abomasum. In this last stomach the food is converted into chyme, and is thence expelled into the duodenum.

This transmission of the aliment from one stomach to the other is continued after the animal ceases to ruminate, but in a less degree of activity. It is kept up by the respiration, which communicates to the viscera a kind of undulatory motion from before backwards, and from above downwards; still the substance in the rumen, which of necessity must be remasticated, are not forced out of this stomach, except in the act of rumination.

The rumen, then, we may consider as a reservoir of the food until it has been thoroughly masticated, the food being passed up and down the œsophagus until it is ready to be deposited in the reticulum, which elevates it into the omasum. The omasum elaborates all substances that have escaped mastication, and were not sufficiently softened to undergo complete digestion.

Finally, the abomasum is the viscus in which the succus gastricus is secreted, this being the only agent capable of effecting the complete solution of the aliment and converting it into chyme.

The ox does not ruminate in sickness and this suspension of rumination is one of the first indications of acute disease. Animals slightly affected will ruminate at intervals. If the rumen is overdistended, which is the case when the animal has eaten too much, or the contents of the viscus have undergone the fermentative process, this action is attended with great difficulty.

Having now got the food into the true digesting stomach, it is necessary I should say a few words on digestion in the stomach. Digestion is the process by which those parts of our food which may be employed in the formation and repair of the tissues, or in the production of heat, are made fit to be absorbed and added to the blood.

Food may be considered, in its relation to the two purposes mentioned; and the various articles of food may be artificially classified according as they are chiefly subservient to the one or the other of these purposes. All articles that are to be employed in the production of heat must contain a larger proportion of carbon and hydrogen than is sufficient to form water with the oxygen that they contain; and none are appropriate for the maintenance of any tissues (except the adipose) unless they contain nitrogen, and are capable of being converted into the nitrogenous principles of the blood.

The name of nutritive or plastic is given to those principles of food which admit of conversion into the albumen or fibrine of the blood, and of being subsequently assimilated, through the medium of the blood, by the tissues. And those principles, comprising the greater part of the non-nitrogenous materials of food, in the form of fat, starch, sugar, gum, and other similar substances, which are believed to be employed in the production of heat, are named calorifacient, or sometimes respiratory food.

No substance can afford nutriment, even though it contains all the elements of organic bodies, unless it have all the natural peculiarities of organic composition, and contain, incorporated with its other elements, some of those derived from the mineral kingdom,

which, as incidental elements, are found in the organized tissues, such as sulphur, iron, lime, magnesia, &c.

The chief ordinary articles of the food of herbivorous animals contain substances identical in composition with the albumen, fibrine, and caseine, which constitute the principal nutritive materials in animal food. Albumen is abundant in the juices and seeds of nearly all vegetables; the gluten which exists especially in corn, and other seeds of grasses, as well as in their juices, is identical in composition with fibrine, and is called vegetable fibrine; and the substance named legumen, which is obtained especially from peas, beans, and other seeds of leguminous plants, and from the potato, is identical with the caseine of milk. All these vegetable substances are, equally with the corresponding animal principles, and in the same manner, capable of being converted into blood and tissues; and like the blood and tissues in both classes of animals, the nitrogenous food of both may be regarded as in all essential respects similar.

The mixture of nitrogenous and non-nitrogenous substances, together with the inorganic substances contained in them, is essential to the well-being, and generally even to the existence of an animal. The mucous membran of the stomach rests upon a layer of loose cellular membrane or submucous tissue, which connects it with the muscular coat, and contains its principal blood-vessels. When the stomach is distended it is smooth, soft, and velvety; when contracted it is thrown into rugæ or folds. Numberless minute cells, varying from $\frac{1}{350}$th to $\frac{1}{100}$th of an inch in diameter, are found on the surface of this membrane; these cells are separated by slightly elevated ridges, which bear minute, narrow, vascular processes, that look like villi, and have given rise to the erroneous supposition that the stomach has absorbing villi like those of the intestines. In the bottom of these minute cells minute openings are visible, which are the orifices of glands imbedded in the mucous membrane. Over the walls of these glands capillary blood-vessels are spread, derived from arteries whose principal trunks are imbedded in the submucous tissue.

The office of these gastric glands seem to be the production of cells containing the digestive or gastric fluid; the elaboration of the gastric fluid in these cells seems to be perfected only as they reach the surface, for the mucous membrane is not acid a little below the surface.

While the stomach contains no food, &c., it is inactive; no gastric fluid is secreted, and mucus which is alkaline covers its surface; but immediately on the introduction of food or other foreign substance into the stomach the mucous membrane becomes reddened with the influx of a larger quantity of blood, the gastric glands commence secreting actively, and an acid fluid is poured out in minute drops, which gradually run together, and become mingled with the contents of the stomach. The gastric fluid contains free hydrochloric, acetic, and lactic acids, the phosphates and hydrochlorates of soda, potash, lime, and magnesia, and an animal matter named pepsine, from its power in the process of digestion.

The digestive power of the gastric fluid is manifested in its softening and partially or completely dissolving various articles of food placed in it at a temperature of from 90° to 100°. This, its peculiar property, requires the presence of both the acid and the pepsine; neither of them can digest alone; and when they are mixed either the decomposition of the pepsine or the neutralization of the acid at once destroys the digestive property of the fluid.

The nature of the action by which the mucous membrane of the stomach and its secretion work these changes in organic matter is obscure. The action of the pepsine may be compared with that of a ferment, which, at the same time that it undergoes change itself, induces certain changes also in the organic matter with which it is in contact, for its mode of action may belong to that class of chemical processes termed "catalytic," in which a substance excites, by its mere presence, and without itself undergoing change as ordinary ferments do, some chemical action in the substance with which it is in contact. The process differs from ordinary fermentation in being unattended with the formation of carbonic acid, in not requiring the presence of oxygen, and in being unaccompanied by the production of new quantities of the active principles, or ferment. The general effect of digestion in the stomach is the conversion of the food into chyme, which is poured into the intestines to undergo further changes.

I believe little is known of the influence of the sympathetic nerves and their ganglia on the movements and secretions of the stomach.

The non-destructibility of the stomach is accounted for as follows:—In a state of health the blood is always alkaline, and the gastric juice acid; the introduction of food into the stomach causes a determination of blood to that organ, as well as causing the flow of the gastric fluid, and the alkalinity of the blood protects the stomach from the action of the acid.

Gentlemen,—I have now brought my labour to a close, and some of you, no doubt, will think that I might have entered more elaborately into my subject; but I thought I would not exhaust your patience by reading you too long a paper, in order that any anatomical or physiological facts which I have omitted might be elucidated in the discussion. I trust that some more practical man than myself will introduce a paper at some of our meetings this year upon the diseases of the stomach in cattle, or upon some other pathological fact with which he is familiar.

I remain, Gentlemen,

Faithfully yours,

Wm. Broughton, M.R.C.V.S.

The discussion turned more particularly on the mode in which rumination is performed, Messrs. Broughton, Anderton, and Fallding, supporting Professor Simonds' theory, viz., "That the rumen ejects the food into the mouth, and after it has been remasticated it returns to the rumen to be subsequently passed to

the reticulum, and thence to the omasum, &c." Messrs. Naylor, Greaves, Freeman, Nicholson, and the President advocated the theory of Youatt, viz., "That the rumen passes the food to the reticulum; the pellet is there formed, and thrown up into the mouth, remasticated, reswallowed, and passed directly to the omasum."

A resolution was unanimously passed that the President and Secretary draw up a letter of condolence to Miss Dick, upon her bereavement by the loss of her brother, Professor Dick.

The next meeting of the Society will be held in July, at Harrogate, when Mr. Broughton will follow up his subject by a paper on the diseases of the stomach of the ox.

W. WILLIAMS, Bradford,
Hon. Secretary.

WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at Taunton, pursuant to notice, on Thursday, April 19th last.

Mr. Raddall, President, occupied the chair.

Mr. Broad, Vice-president, Mr. T. D. Gregory, Mr. Barrell, Mr. Channon, senr., Mr. Channon, junr., Mr. Gibbs, Mr. T. Greaves of Manchester, and the Secretary, were present.

The minutes of the Bristol meeting having been read, confirmed, and signed, a letter was read from Mr. Bodington expressive of his regret at not being able to attend the meeting owing to an accident which he received a day or two préviously. Ex-professor Morton likewise, in a note, mentioned his inability to attend. The *President*, in brief speech, proposed Mr. Greaves for election as an honorary associate, which was seconded by *Mr. Broad* and unanimously adopted.

Mr. James Channon, Mr. Thomas Channon, and Mr. William Ward, of Crediton, were elected members of the Association. The usual routine business being ended, *Mr. Broad* proceeded to read his essay on "Seedy Toe." Several specimens of the disease were shown to the members for the purpose of explaining the views held by the essayist. A desultory conversation took place. At the close, it was agreed that the essay be reconsidered on the next day of meeting.

The subject of "Seedy Toe," or "Seedy Foot," as Mr. Broad designates the disease, is little understood by people generally—and, perhaps, the same will, with equal force, apply to members of the profession—that the more the subject is ventilated the better.

Dinner being announced, and time advancing, it was considered wise to take care of the inner man, after which the conversation turned upon the subject matter of the essay, when Mr. Greaves

availed himself of the opportunity of reading some remarks in reference to the essay. He spoke also of the education of the veterinary surgeon. He said, "I perceive one special sentiment pervading the character of each and all, viz., the true *practical element*. And it is in these associations that we must denounce a state of things existing in some places, that is to say, the want of a *practical* teaching of the pupil." He proceeded to say, "We must not be meally-mouthed about it; the present season is very opportune; there is no possible way of overcoming this great evil except by making every aspirant to our profession serve a regular apprenticeship; he should begin at the beginning."

It was arranged to hold the next meeting at Bath, at which officers will be elected for the ensuing year.

R. H. Dyer,
Hon. Sec. and Treasurer.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

The usual quarterly meeting of the above Association was held on the evening of Friday, 11th May, in the rooms of the Medical Institution, Mount Pleasant. In the unavoidable absence of the President, Mr. Hayes, Vice-President, was unanimously called to the chair.

In addition to the local members, the following gentlemen were present from a distance:—Mr. Greaves, Manchester; Mr. Howell, Rochdale; Mr. Whittle, Worsley; Mr. Wood, Wigan; Mr. Storrar, Chester; Mr. Halfey, Southport; and Mr. Walley, West Derby.

The minutes of the former meeting having been read and confirmed, the *Chairman*, in a very feeling manner, announced to the meeting the great loss the Association had sustained by the death that day of one of its oldest and most valued members, Mr. Friend, one well known to them, and one who was universally respected by all with whom he came in contact.

The meeting then proceeded to discuss Mr. Walley's paper on "Cancer in the Domestic Animals," as read at last meeting, and since published in the *Veterinarian*. The whole of the gentlemen present took part in the discussion, which was both animated and interesting.

In the course of the evening *Mr. Greaves* made the following remarks, which, although not exactly pertinent to the subject of the essay (canker in the foot of the horse being only casually alluded to in the paper), yet, bearing as they did on a formidable disease and the efficiency of practitioners, were very warmly received.

Mr. Greaves observed—

Mr. President and Gentlemen,—It is with feelings of no ordinary pleasure I again meet you to discuss the nature and treat-

ment of canker in the foot of the horse. Perhaps there is no disease which has tested so much at one and the same time the ability, the patience, and temper, of the practitioner. There is no disease so replete with interest; and if a plan can be inaugurated and developed by which a cure can be effected with a comparative degree of certainty, then, I say, we cannot occupy our time or our intelligence in a more useful pursuit.

As regards the nature of canker, I shall not enter into that question; it has already been most ably explained, but in reference to the treatment I may be allowed to say that I have no faith whatever in any treatment of canker short of the operation. I do not consider it of much importance as to commencing with the case in its early stage; I have had a goodly number of these cases to operate upon, and as yet not one of them has failed. It requires a considerable deal of care and attention after the operation in applying our dressing; if fungus arises it requires repressing—using strong solution of alum, fenyline, Egytiacum, &c. &c. If the fungus is intractable, the best of all applications is a piece of flannel saturated in hydrochloric acid, and laid upon the surface, the part having been wiped perfectly clean first. After this put a quantity of tow upon it and bandage; let the packing be moderately tight, so as to apply a fair amount of pressure with a bandage; let it remain on for two days, then remove it, and you will find the fungus all killed; you may slice it off a quarter or half an inch thick without bleeding, and my experience of it is this—it is never attended with troublesome or with dangerous consequences. I would not repeat it unless, in a week or so afterwards, it seemed to require such repetition. Mr. Lawson, jun., extols a paste of alum and sulphuric acid; I have found it an excellent application. You may succeed such an application with tar and alum. This plan of treatment, carefully followed up with a reasonable exercise of patience, will cure canker, even in the worst of cases, where six, twelve, or eighteen months have been spent in labour in vain. I can commend no other cure for canker.

I now wish particularly to call your attention to another matter, which, although it is not exactly and precisely canker, is inseparably connected with the subject—it is the consideration of what is the duty or province of a veterinary surgeon in the treatment of canker. I grant you it is a dirty nasty job, and makes your fingers stink not a little. The army veterinary surgeons, as a rule, delegate it to the regimental farrier. I have never met with a smith who, however good a hand he may have been at a sound foot, was competent properly to examine a lame foot; it is a circumstance of almost daily occurrence that I find pus to be concealed in feet where the smith has failed to discover it. The army veterinary surgeon would consider it derogatory to him to use the searcher; but the veterinary surgeon in general practice is very differently situated. My experience has shown me that the practitioner is expected to take the searcher in his own hand, and to examine the foot himself. The veterinary surgeon who is most thoroughly con-

versant with it, and can use it expertly, has an enormous advantage over his fellow-practitioner. The man who succeeds best in practice is the man who can use his searcher and examine the foot most perfectly. You may say what you like to the contrary, but I maintain no man, however high may be his intellectual attainments, can superintend or direct the paring or examination of the foot properly if he is unable himself to do the same. I believe I am speaking strictly within compass when I say the practical instruction of the pupil upon the foot of the horse which is given him at College is lamentably deficient. There are scores of young men who, up to the time they obtain their diploma, have never once in their lives had a searcher in their hands. Now, I would ask are such men as these fit to have a valuable horse placed in their care? Can it be expected that they can be competent to examine the lame horses that come daily, nay, hourly, before the veterinary surgeon in a large town practice? Would it not be equally absurd that a schoolmaster should expect his scholar to be a proficient writer who had never had a pen put into his hand; or that a young lady should be expected to be a proficient player upon the pianoforte who had never once fingered the keys? It is as essentially necessary in the one case as in the other; to acquire proficiency there must be a considerable amount of personal application. It is perfectly useless to tell me there is no comparison between the cases; my experience has, over and over again, convinced me that no man can examine a lame foot properly who has not been himself practically accustomed to the use of the searcher. I think it is of great importance that the student should be taught to take up the foot between his own knees, and be taught to pare out feet and know how to use his searcher properly, before he obtains his diploma; learn him to put himself in shipshape when he goes about a horse. This is most important in town practice, where nine cases out of every ten are cases of lameness, and six out of every eight animals are lame in the foot; therefore it evidently follows that he who is most proficient in his knowledge of the foot, and is most expert in adapting his remedies, is the most useful member in society, and society will not fail in appreciating and recognising such services. I ventured to throw out a suggestion at the West of England Association, on the 19th of last month, that these provincial Veterinary Medical Associations should get up a collective memorial to the Council and the Colleges, praying them—1st, to institute at each of the Colleges the initiatory examination of the pupil; 2nd, to enforce the apprenticeship clause in every student about to enter the College; and 3rdly, to inaugurate at each of the Colleges a course of practical instruction on the foot of the horse. If these things were done we should have performed a most important service not only to our profession but also to society at large; it would give a practical proof how pre-eminently valuable are these institutions in the development of veterinary science, and how much we have contributed in making fairer and happier our calling.

After the usual votes of thanks the meeting broke up. The next

paper will be read by Mr. W. A. Wilson, "On Bleeding; its Use and Abuse."

GEORGE MORGAN, *Hon. Sec.*

Veterinary Jurisprudence.

MOORE *v.* JAY.

THIS was an action by a veterinary surgeon to recover damages for breach of contract. The plaintiff entered into an agreement with the defendant, the railway contractor, to attend to his horses for twelve months for the sum of 15*s.* a horse by the year. After three months the defendant became dissatisfied with the plaintiff's system of treatment, and gave him notice that he should not require his services again.

Mr. Huddleston, Q.C. (with him *Mr. Holt*) for the plaintiff, said that the plaintiff was a homœopathic veterinary surgeon, and that this system of treatment was found to be more successful upon horses than upon human beings. The plaintiff had been employed by the defendant on two or three occasions since 1860, and had after some time discontinued his services. In January, 1865, the agreement, the breach of which was in question, was entered into, and under it the plaintiff had faithfully performed his duties; but the defendant having from some cause or another lost some horses, became dissatisfied with the homœopathic system of treatment, and refused to perform his part of the agreement. He had by his pleas added insult to injury, by alleging that the defendant was incompetent in his profession.

A copy of the agreement, as proved, was placed in the hands of Mr. Pollock to be read in evidence.

Mr. Pollock said it could not be received till the stamp duty of £11 2*s.* 6*d.* had been paid.

Mr. H. James, for the defendant, offered to withdraw the plea disputing the agreement.

Mr. Baron Martin said that that could not be done. He had no power to strike the plea out of the record, and if he had power he would not exercise it in this case. The agreement, if used, must be stamped.

Mr. Huddleston.—We want to save all the money we can in these very hard times.

Mr. H. James suggested that there would be scarcely sufficient to pay these duties in all Lombard Street.

Mr. Holt.—In the Common Pleas I have put in a copy of an agreement without a stamp, and it was not objected to.

Mr. Baron Martin.—I have allowed the same thing to be done a

hundred times, but it is wholly illegal. There is an Act of Parliament which expressly prohibits it.

The payment of the duty having been provided for,

The plaintiff, who wore a moustache and a large beard, proceeded to prove his case, but he spoke in such an indistinct manner that it was very difficult for any one to understand what he said.

Mr. Baron Martin, having repeatedly asked what the plaintiff had said, remarked that there ought to be a law that all persons who came into court to give evidence should be well shaved, so that they might be able to speak out plainly and be understood (great laughter).

The plaintiff observed that he had not been able to hear what the counsel or his lordship had said, but he afterwards spoke more distinctly, and stated that he attended the horses belonging to the Midland Railway Company; of Smith, Knight, and Co.; of the Marquis of Bristol, the Earl of Bessborough, Colonel Townley's racing stud, and also those of some twenty or thirty other noblemen and gentlemen, and in all cases he treated them homœopathically and successfully.

In cross-examination, the plaintiff said that the homœopathic system of treatment was best in acute diseases.

Mr. H. James.—Does it put the animals out of the way sooner? Does it cure or kill?

The plaintiff.—I leave the killing to the allopaths. I have successfully followed my system for fifteen years.

Mr. Huddleston.—The allopaths kill and the homœopaths cure.

The defence was that under the plaintiff's treatment some five or six of the horses died, and that they were worth £30 each.

Mr. Baron Martin having summed up the evidence,

The Jury returned a verdict for the plaintiff, with £35 damages.

ANOTHER RINDERPEST CASE.

Knowles *v.* Nunns.

The plaintiff lives at Yeanon, in the parish of Guiseley, and the defendant is a cattle-dealer at Horsforth. The action was for a breach of the warranty of six bullocks which the plaintiff had bought from the defendant, on the 2nd October, for £73, on the assurance of the plaintiff, as was alleged, that they were free from disease, whereas it turned out that they were not. *Mr. Manisty* said the six cattle had been in Newcastle market on the 25th September, and on the 27th the defendant bought them in Leeds cattle market. He took them to Newlay Park, in which district there had been no rinderpest at that time. On the 3rd October the cattle were transferred to the plaintiff, and in two days after one bullock presented symptoms of the disease. Before the plaintiff

made the purchase the defendant assured him that he had had the cattle in Newlay Park fourteen days, but that was alleged to be a misrepresentation. On the 19th October the first animal attacked died, and the second became ill on the 22nd, and succumbed on the 6th November; a third, fourth, and fifth also deceased, and the sixth was attacked, but recovered. Unfortunately, the plaintiff had a large herd of cattle, and thirteen of them were attacked, nine of which died. The plaintiff and his servants proved in the witness-box that the plaintiff had told the defendant he would not buy the cattle unless he had a warranty, as there was so much disease about; and the defendant and his agents said the cattle were all right, and they would warrant them all right. It was argued for the plaintiff that the cattle must have had the disease on the 2nd, when it developed itself on the 5th; and that, the defendant knowing the cattle had come from Newcastle, which was an infected district, the plaintiff was entitled to recover the value of the five which first died, something for the depreciation of the one which had recovered, and the price of the nine out of the original herd of the sixteen, besides about £20, the expenses to which he had been put in obtaining medical aid.

Mr. Clement Stephenson, Veterinary Inspector, Newcastle, proved that on the 26th of September there were infected cattle in Newcastle market. He said it was important in these cases to consider the sex of the animals; in this instance they were bullocks, and very often the disease did not develop itself so quickly in them as in milch cows.

Mr. Carter, Veterinary Surgeon, Bradford, who had been called in to attend plaintiff's cattle, agreed with the last witness as to the time of incubation and the development of the disease, and also as to the time generally elapsing before the death of the animal attacked.

Mr. Dray, Veterinary Surgeon, Leeds, made a *post-mortem* examination of one of the animals in conjunction with Mr. Carter, and had no doubt that the animal died of the disease termed the cattle plague. There was another animal dying of the same disease. Witness was of opinion that it generally requires ten days for the development of the disease after infection. The time varies before death takes place, but generally it is from five to six days.

The defence was that the warranty of horned cattle was a most unusual thing, and in this case it would have been madness, because of the virulence of the cattle plague at the time. Another point taken was that the disease was "slavering danie," or the foot-and-mouth disease.

The Jury found a verdict for the plaintiff for £30, the foreman explaining that the amount was awarded in respect of the first two bullocks that died, the jury being of opinion that these animals were affected with the plague when purchased, and had communicated it to the others.

NEW MEMBERS OF THE PROFESSION.

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons the following gentlemen passed their examinations, and were admitted members of the body corporate.

STUDENTS OF THE ROYAL VETERINARY COLLEGE, LONDON.

April 24th.

Mr. Peter Irving . . . London.
— Robert Albert Stock . . Bath.
— Henry Tozer . . . Woolwich.
— Joseph Carlisle . . . Carlisle.
— William Cockburn . . Glasgow.
— John Wallin . . . . Theale, Berks.
— Philip Benjamin Phillips . London.
— Frederick Low . . . London.
— John Pile . . . . Holyport, Berks.
— James Ferguson Simpson . Windsor.

April 25th.

Mr. Charles John Fleetwood . London.
— James Lionel Barling . . Newnham, Gloucester.
— Robert A. W. Stevenson . Burwash, Sussex.
— Samuel Burton . . . Paignton, South Devon.
— Walter Seymour Adams . Lymington, Hants.
— Henry William Thomas . Plymouth.
— George Shelton Talbot . Walton, Notts.
— William Simpson . . . Liverpool.
— Henry Ford . . . . Tewkesbury, Gloucester.
— Charles Markham . . . Rugeley, Stafford.
— Arthur John Sprague . . Kimbolton, Hunts.

April 26th.

The Hon. Montague H. Mostyn . Rosmead, Delvin, Westmeath.
Mr. John Wortley Axe . . Doncaster.
— James Sumner . . . Liverpool.
— Algernon Pitcher . . . Hellingby, Sussex.
— George Cowlishaw . . Ratby, Leicestershire.
— Frederick Davis . . . Redhill, Surrey.
— Robert Jay . . . . Norwich.
— Stephen Goodall . . . Croxton Park, Grantham.
— John Bazley . . . . Faulkland, Somerset.

April 27th.

Mr. Charles Parsons . . . Launceston, Cornwall.
— Isaac James . . . . Corsham, Wilts.

Mr. Douglas Winton . . . Chase-side, Enfield.
— Frank Daws Bray . . Winchelsea, Sussex.
— William Goldup Packman . Wye, Ashford, Kent.
— Alfred May . . . . Biebrich, Nassau, Germany.
— James Frederick Hall . . London.
— Alderman Charles Bagg . Colchester.

May 1st.

Mr. Joseph Hudson . . . London.
— Jabez Traylen . . . Balsham, Cambridgeshire.

STUDENTS OF THE EDINBURGH AND GLASGOW VETERINARY COLLEGES.

April 24th.

Mr. Walter Grieve . . . Selkirk.
— Robert Park . . . Glasgow.
— John Meikle . . . Muirkirk, Ayrshire.
— Charles Turnbull* . . Dumbartonshire.
— Charles Paterson* . . Dewsbury, Yorkshire.
— William Whittle* . . . Worsley, Manchester.
— George Morgan* . . . Liverpool.
— John William Wright* . . Bilborough, Yorkshire.
— James Mitchell . . . Musselburgh, Edinburgh.
— Francis Houghton Muston . Edinburgh.
— Albert Septimus Cox* . . Manchester.

April 25th.

Mr. William Fearnley* . . Featherstone, Yorkshire.
— Alexander Stewart* . . Rothiemay, Banffshire.
— James P. S. Walker* . . Evanton, Ross-shire.
— Edward Lewis* . . . Great Budworth, Cheshire.
— William Little* . . . North Cave, Yorkshire.
— John Harding Huges* . . Swansea, Glamorganshire.
— Andrew Mann . . . Durham.
— James Kettle* . . . Leith Fort, Leith.
— Archibald Donald* . . Paisley.
— William Dacre* . . . Manchester.

May 1st.

Mr. Thomas Fry* . . . Ashmill, Ashwater, Launceston.
— Joseph Little . . . Alston, Cumberland.
— Alexander Horne . . . London.
— John Lovitt . . . . Messingham, Lincolnshire.
— Lewis Duncan . . . Newpitslip, Aberdeenshire.
— John Faulkner . . . Wetherby, Yorkshire.

* These gentlemen have also obtained the Highland and Agricultural Society's certificate.

MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS WHO HAVE BEEN APPOINTED GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton
Jones, A. A., Biggleswade
New, A., Ampthill
Rogerson, T. W., Bedford

Berkshire.

Allnutt, Henry, Windsor
Bland and Field, Newbury
Buckridge, Hungerford
Drewe, G. A., Abingdon
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Lunnon, Henry, Windsor
Simpson, Henry L., Windsor
Waterman, C., Reading
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
East, William, Princes Risborough
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Rawlings, C. and W., Thorney
Scruby, Thomas, Royston
Sparrow, S., Cambridge
Wallis, Page, Cambridge
Webb, G. B., Balsham, Linton

Cheshire.

Barker, George, Brereton, near Congleton
Barker, Richard, Middewich
Darling, James, Duddon Tarvin
Darwell, George Henry, Knutsford
Dunn, William, Tarporley
Greaves, John, Altrincham
Hulme, T. D., Congleton
Lewis, Walter, Crewe
Maxfield, Robert, Congleton
Taylor, John Boardman, Hyde
Willett, W. G., Northwich

Cornwall.

Arnall, George, Bodmin
Hire, Edward, Penzance
Lamb, G. W., Liskeard
Page, George, Truro
Tucker, E., St. Germans
Warne, Raddall, South Petherwin

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Fisher, John, Whitehaven
Thompson, Henry, Aspatria

Derbyshire.

Flower, Henry, Derby
Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, James, St. Sidwell
Austin, Thomas D., Honiton
Bickford, Alfred, Totnes
Bickford, W. J., Kingsbridge
Brewer, William, Barnstaple
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Gregory, T. D., Bideford
Heath, James P., Exeter
Hewish, John, Barnstaple
Leach, Edward, Northampton
Ward, William, Crediton
Watson, Alfred, Tiverton

Dorsetshire.

Redwood, Joseph, Dorchester

Durham.

Adamson, Thomas, Barnard Castle
Allison, William, Thornley
Dudgeon, David, Sunderland
Foreman, Thomas, Leadgate
Hall, Robert, Stockton-on-Tees
Hedley, Matthew, Darlington
Hunting, Charles, South Hetton
Loudes, A. M., Bishop Auckland
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Peele, J. E., Durham
Plews, Thomas, Stockton

DURHAM (*continued*).
Thompson, Thomas, Sunderland

ESSEX.
Brook, T., Chipping Ongar
Easton, W. B., Woodford
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Seaman, Isaac, Saffron Walden,
Shave, Edward S., Chelmsford
Taylor, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

GLOUCESTERSHIRE.
Thomas, Richard W., Tewkesbury

HAMPSHIRE.
Barford, John Davis, Southampton
Cartwright, Charles, Bishop's Waltham
Clarke, W. M., Christchurch
Colebrook, Charles, Basingstoke
Gates, Robert, Andover
Gould, George James, Southampton
Gregory, J. B., Portsmouth
M'Cutchan, J., Farnham
Redford, Thomas, Winchester

HEREFORDSHIRE.
Barling, F. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.
Hirst, Charles Samuel, Barnet
Proctor, Harrison, Hertford
Rogerson, Ed., St. Albans
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Bishop's Stortford
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.
Caudwell, W. H., St. Neots
Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives
Waters, George, St. Ives

ISLE OF WIGHT.
Wheeler, Edwin, Rookley

KENT.
Ashton, John, Sevenoaks
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cooper, John, Ashe
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst. W. Henry, ditto
Fordham, George, Willesborough

KENT (*continued*).
Hogben, Henry, East End Hill, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, J. W., Worsley, Manchester
Cunliffe, Thos., Church, Accrington
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Heyer, Gilbert, Liverpool
Hutchinson, T., Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Nuttall, Ed., Rawtenstall
Polding, P. Oswald, Bury
Rhodes, John, Hulme
Richmond, Henry, Chorley
Smith, Benjamin, Ulverston
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Twist, Charles, Woolton
Welsby, Joseph, Prescot
Worthington, Wm., Wigan
Yates, John, St. Helens

LEICESTERSHIRE.
Bailey, Edward, jun., Leicester
Gray, Charles, Kibworth, Harcourt
Wiggins, John, Market Harborough

LINCOLNSHIRE.
Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston
Brooks, W. H., Grantham
Chapman, John, Gainsborough
Clarke, Thomas Allen, Horncastle
Clayworth, Joseph, Hundleby
Cutting, Henry, Market-Raisen
Darby, Thomas, Louth
Dickinson, J. G., Boston
Dobson, John, Wragby
Dobson, R. W., Holbeach
Gresswell, Daniel, Louth
Hall, William, Northkillingholme, Ulceby Junction
Hardy, R. T., Sleaford

LINCOLNSHIRE (*continued*).

Hardy, Robert, Westgate, Grantham
Howse, Henry, Lincoln
Hutson, Cnrtis, Market Rasen
McHugh, John T., Brigg
Metherell, Richard, Spalding
Roberts, John Thomas, Long Sutton
Santy, Arthur H., Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle
Wattam, John, Stamford
Wentworth, George, Laceby, Great Grimsby
Whitworth, Charles Joseph, Grantham
Wilson, Robert, Caistor
Wyer, Daniel, Talkingham
Wyer, Goforth, Dorrington, near Spalding

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Dale, William, Stanmore
Dexter, Thomas, 8, Motcombe Street, Chelsea
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Stanley, Thomas, Edmonton
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth
Wiltshire, Thomas D., Rhymney, near Tredegar
Wilkes, Thomas, Newport

NORFOLK.

Baldwin, George Thomas, Fakenham
Barcham, Robert, Paston, North Walsham
Beart, Walter James, Lynn
Bower, William, East Reedham
Bower, W. J. T., East Reedham
Buckingham, John, Barnham Broom, Wymondham
Buckingham, H. Harleston
Carter, Charles N., Swaffham
Carter, James, Litcham
Carter, Richard, East Dereham

NORFOLK (*continued*).

Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Emms, Henry G., Foulsham
Grimmer, Charles, Bungay, Suffolk
Hammond, John, Bale, Thetford
Heffer, Robert, Downham Market
Holl, Lewis, Outwell, Wisbeach, Cambs.
King, Edward James, Diss
Knowles, Robert, South Brink, Wisbeach, Cambs.
Mays, Thomas, Wymondham
Newson, Henry, Beccles, Suffolk
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
West, John, Thetford, Norfolk
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Aris, Benjamin B., Wellingborough
Branford, Wm. Catton, Oundle
Dawson, Jacob, Kettering
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Page, C. N., Banbury, Oxfordshire
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Boag, William, Morpeth
Fairbairn, John, Alnwick
Hubbick, Joseph, ditto
Hunter, H., Newcastle-upon-Tyne
M'Gregor, Daniel, Seaton Delaval
Stephenson, C., Newcastle-on-Tyne
Wilkinson, Henry Etridge, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Barlow, Robert, Cotgrave, near Bingham
Cave, Thomas, Nottingham
Cope, W., 3, King's Road, Newark
Hudson, T. T., Bolsover, Chesterfield, Derbyshire
Hudson, Richard, Moorgate, Retford
Hutchinson, Henry, East Retford
Pyatt, Henry, Nottingham

NOTTINGHAMSHIRE (*continued*).
Reynolds, Richard, Mansfield
Talbot, Francis, Whatton, near Bingham
Talbot, Thomas W., Tuxford, Oxfordshire
Young, Wm., Southwell
Western, John, Eastwood
Wilson, R. S., Ollaston

OXFORDSHIRE.
Bull, Alban, Hooknorton
Jennings, William, Bicester
Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury
Wadlow, C. H., Oxford

RUTLAND.
Parnell, Charles, Oakham

SHROPSHIRE.
Atcherley, James, Bridgenorth
Brookholding, James, Ludlow
Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jenks, John, Ellesmere
Jones, James B., Ludlow
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton
Roberts, Thomas, Oswestry
Walters, Robert G., Newport

SOMERSETSHIRE.
Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Dring C. J., Bath
Emms, William, Ilminster
Gibbs, Joseph, Taunton
Gregory, C. N., Bristol
Hutchings, William, Kimpton
James, Sydney, Frome
Leigh, Nathaniel, Bristol
Stauffer, J., Wedmore
Symes, Charles, Wincanton
Symes, Thomas, Yeovil
Whitmore, George, Landport
Whitmore, Absalom, Shepton Mallet

STAFFORDSHIRE.
Barry, William, Lichfield
Carless, John, Stafford
Carless, William, ditto
Cartwright, H. J., Wolverhampton
Checketts, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Hunt and Parker, Birmingham
Llewellyn, W. H., Newcastle-under-Lyne
Markham, John, Rugely

STAFFORDSHIRE (*continued*).
Pritchard, Harry D., Wolverhampton
Pritchard, Richard, ditto
Robinson, William, Tamworth
Walters, Robert George, Newport

SUFFOLK.
Barrow, Wm., Newmarket, Cambs.
Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.
Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes and Lowe, John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Moon, James, Kingston-on-Thames
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.
Burt, Walter, Brighton
Burt, William, jun., ditto
Callow, John, Horsham
Crofts, Henry, Arundel
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.
Elkington, R., Coventry
Ison, William Charles, Atherstone
Mather, Frederick, Warwick
Proctor, Alfred B., Meriden
Rose, James, Warwick
Stanley, Wm. Thomas, Leamington
Verney, R. G., Stow-on-Wold
Walker, Alfred, Rugby
Watson, Walter, ditto

WESTMORELAND.
Eastcott, W., Rendal

WILTSHIRE.
Aubrey, Thomas, Salisbury
Bibby, James, Calne

WILTSHIRE (*continued*).

Coleman, John, Pewsey
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, R. Tutnall, Bromsgrove
Harber, W. Alex., Kidderminster
Huntress, J. R., Dudley
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, J. W., Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Barker, William, Middlesborough
Bourdass, George, Bridlington
Bowman, Thomas, Croome
Boyce, J. H., Goole
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Case, F. M. M., Rotherham
Collins, Thomas, ditto
Cooper, J., Market Weighton, Brough
Curtis, Richard, Shipton
Cuthbert, John, Leeds
Day, Frederick, York
Dearlove, William, Harrogate
Douthwait, William, Beverley
Dray, Edward C., Leeds.
Edmundson, W., Hornby

YORKSHIRE (*continued*).

Elam, William, Huddersfield
Emmot, D. C., Keighley
Fallding, S. F., Wakefield
Freeman, Joseph, Hull
Fryer, J., Kirby, Fleetham
Harrison, S. M., Thirsk
Hedley, F., Richmond
Hedley, J. W., ditto
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kingrose, Jonathan, Weaverthorpe
Kirk, B. R., Settle
Lawson, Henry, Northallerton
Lockwood, J. N., Kingston-upon-Hull
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Naylor, E. M., Wakefield
Nicholson, Robert, Womersley
Patterson, Charles, Dewsbury
Pemberton, G. H., Knaresborough
Pennock, James, York
Robinson, A. E. G., Snaith
Scriven, William, Aberford
Secker, Charles, Knaresborough
Secker, Thomas, Ripon
Stephenson, William, Pickering
Stevenson, John, Whitby
Stoddard, John, Richmond
Stone, Matthew, Doncaster
Sutton, Charles, Knaresborough
Taylor, W. B., South Auston
Thornton, James, Easingwold

WALES.

Bodington, George, Canton, Cardiff
Kennedy, Thomas, Wrexham
Rowland, David, Llanrhaiade, Denbighshire
White, Thos., Rhyd-y-Glaves, Corwen.

SCOTLAND.

ABERDEENSHIRE.

Snowball, Matthew C., Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

FORFARSHIRE.

Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso
Rowe, William, Jedburgh

ARMY APPOINTMENTS.

WAR OFFICE.

7TH HUSSARS.—Veterinary Surgeon J. Burr, from half-pay, late Military Train, to be Veterinary Surgeon, *vice* J. Barker (1st class), who retires upon temporary half-pay.

MISCELLANEA.

PRESENTATION OF A TESTIMONIAL TO MR. JOHN HUTCHINSON, V.S.

We have much pleasure in announcing that on Tuesday, 15th May, a number of the friends of Mr. John Hutchinson, veterinary surgeon, South Shields, met at the Grapes Hotel, Market Place, for the purpose of presenting him with a testimonial as a mark of their esteem and appreciation of his skill as a veterinary surgeon. The testimonial consisted of a valuable gold watch, Albert guard, and locket, together with a purse of gold. The watch and appendages were obtained at the establishment of Mr. John Bell, silversmith, King Street, South Shields. The watch had engraved upon it the following inscription:—"Presented to Mr. John Hutchinson, V.S., South Shields, by numerous friends, as a mark of their esteem and appreciation of his skill as a veterinary surgeon. 15th May, 1866." Previous to the presentation an excellent supper was partaken of, at which Mr. J. Ditchburn presided. Mr. Isaac Tweddell occupied the vice-chair.

The Chairman, in making the presentation, referred among other things to the appearance of the rinderpest in the locality, and observed that Mr. Hutchinson, as Government inspector, had had an onerous duty to discharge, but this he had performed with great manliness and ability. The desire of Mr. Hutchinson, indeed, throughout the whole of his proceedings, was to do his duty as a public servant and to act fairly to all, which principle he had uniformly carried out.

Mr. Hutchinson, in reply, spoke at great length, referring especially to the circumstances which had led to the presentation, and, after again thanking his friends for the handsome testimonial they had presented to him, resumed his seat amid much applause.

[Want of space has prevented our giving the speeches in detail.]

OBITUARY.

E. A. Friend.—Died at his residence, Kingslake Street, Liverpool, Ephraim Alfred Friend, May 11th, aged 66. He obtained his diploma April 21st, 1820.

The pages of the *Veterinarian* have been enriched from time to time by Mr. Friend's contributions on cattle pathology, and among them may especially be named his papers on "Puerperal Fever." For many years he was a regular contributor to the Journal, but owing to some disappointment his contributions had ceased for some time. About twelve months before his death he read an able paper before the local Veterinary Medical Association on the "Liabilities of Veterinary Surgeons," which has been since published.

Unlike many of his brethren, Mr. Friend loved the profession for its own sake. It may be said of him that a more honorable or kind-hearted man cannot be found in our ranks.

Requiescat in pace.

THE

VETERINARIAN.

VOL. XXXIX. No. 463. JULY, 1866. Fourth Series. No. 139.

Communications and Cases.

THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Professor Tuson's Lecture on Putrefaction.

The following is an abstract of a lecture delivered by Professor Tuson at the Royal College of Veterinary Surgeons, on the 3rd of May last, and attended by Professors Varnell (President), Morton, Brown, Gamgee, and Armatage; Messrs. Wilkinson, W. Mavor, H. B. Tuson, Gowing, Wm. Field, jun., Pritchard, J. R. Cox, J. Broad, Batt, Woodger, Helmore, H. Laurence, jun., Sangster, Hall, T. Burrel, jun., Coleman, F. T. Stanley, Horne, Duncan, Little, and others. Professor Tuson said—

"Being privileged to occupy the position of lecturer to-day, permit me, Mr. President and Gentlemen, to address you on a subject which I trust will prove interesting, from the circumstance of its possessing a very high degree of both scientific and practical importance. I allude to putrefaction; its causes or conditions of development; how it may be prevented, retarded, or arrested; and how we can best render innocuous the various poisonous or disease-producing bodies to which it gives rise.

Every one knows that when dead animal and vegetable matters are exposed to the joint influences of moisture, warmth (from 50° F. to 100° F.), and the atmosphere, they

soon decompose and emit gases and vapours possessing, in many instances, offensive odours, and that they (the decomposing substances) are then said to *putrefy*, or to be undergoing the process of *putrefaction*.

To explain the cause of such phenomena different attempts have been made, but I shall, on the present occasion, merely invite your attention to two of them. In order to explain, or to recal to your minds the theory that was more or less generally accepted for a considerable period, and until very recently, I must remind you that Liebig, a good many years ago, divided the leading proximate principles of animals and plants into two classes. One class he called the nitrogenous or albuminous, and the other class he termed the non-nitrogenous or amylaceous. The former includes albumen, fibrin, casein, and their analogues; while the latter includes starch, various sugars and gums, and other compounds possessing similar constitutions. In the subjoined table is represented the composition of the leading albuminoid and amyloid principles, and if a comparison be instituted it will be seen that (assuming we are justified in assigning chemical formulæ to the nitrogenized group) the former are vastly more complex than the latter, both as regards the number of different elements and the number of atoms of each of those elements united, to form a single molecule of any one of these bodies.

Albumen Fibrin Casein	$C_{400}\ H_{310}\ O_{120} N_{50}\ S_2 P$	Starch Dextrine Cane sugar Sugar of fruits Sugar of milk	$C_{12}\ H_{10}\ O_{10}$ $C_{12}\ H_{10}\ O_{10}$ $C_{24}\ H_{22}\ O_{22}$ $C_{12}\ H_{12}\ O_{12}$ $C_{24}\ H_{24}\ O_{24}$

It had long been believed that while the albuminoids rapidly underwent putrefaction, the amyloids suffered a comparative immunity from change if kept by themselves, although exposed to those influences which induced the apparently spontaneous decomposition of the first-named principles. Now to explain the cause of this difference in properties, it was stated that in consequence of the composition of albuminous substances being so exceedingly complex, the chemical affinity binding their elements together was so feeble, that it was only necessary to apply an external excitant to ensure molecular or atomic motion being aroused and propagated throughout the mass of an albuminoid. The excitant was said to be oxygen (hence the necessity for atmospheric exposure), and the result of the movement which it excited was the resolution of putrescible bodies into simpler and therefore more stable combinations, which were

denominated the products of putrefaction. Then with regard to the intimately-related processes of fermentation, it was said that particular sugars, urea, and certain other compounds, which alone do not decompose, could only undergo conversion into alcohol, carbonic acid, lactic acid, ammonia, &c., after they were mixed with a putrefying albuminoid, and that fermentation was brought about by the motion acquired by the decomposing albumenoid being imparted, by catalysis or contact, to the fermentable amyloid, &c. We shall presently find that the presence of an albuminous principle is not essential to fermentation, and that the above so-called explanation of the cause of fermentation is not a correct one. Such, however, is an outline of the theories of putrefaction and fermentation which were accepted for a long time, and until the year 1862, when Pasteur gave to the world the results of his laborious and masterly researches on these phenomena, and supplied us with a much more rational exposition of their causes, to which there appears to be little if any objection. According to Pasteur, putrefaction and fermentation are not purely chemical processes, but physiological, and the chemical effects observable are the accompaniments or results of so-called vital acts.

To convey some notion of the nature of Pasteur's investigations, attention may be briefly directed to a few of the many experiments instituted by this *savan*.

The existence of minute organisms in the atmosphere was determined experimentally, thus :

1. Air was drawn through a glass tube loosely packed with gun-cotton. The gun-cotton acted as a filter, permitting the passage of the gaseous constituents, but retained any solid particles, living or dead. The addition of ether to the gun-cotton so treated dissolved it, and left the solid bodies derived from the atmosphere as a kind of precipitate. This precipitate contained starch-granules, spores of fungi, and the germs of infusoria ; and on introducing it into a medium (from which air and germs of all kinds had been carefully excluded) suited to the development of microscopic beings, *mucedines* and *bacterium termo* made their appearance in from twenty-four to thirty-six hours.

2. A quantity of the filamentous mineral asbestos was strongly heated to destroy any adhering germs, and when cool was introduced into a fluid capable of nourishing organisms, but no animal or vegetable life was engendered.

3. Another quantity of asbestos, after having been heated as in the last experiment, was introduced into a tube, and made to act as a filter to a current of air—in fact, to perform

the functions of the gun-cotton adverted to above. That the asbestos in this instance derived from the air germs of microscopic life was proved, by placing it in a fluid capable of contributing to their development, and by observing the production and multiplication of fungi and infusoria. I may here observe that I have, during the prevalence of the cattle plague, submitted air to microscopic examination, and discovered in it a mixture of animal and vegetable life. Pasteur, then, having proved by numerous, the most sagaciously contrived, and carefully conducted experiments, that our atmosphere in most, though not in all, situations is charged with living beings, next demonstrated that they are the true exciters or causes of putrefaction and fermentation. They alight from the atmosphere, come in contact with dead animal and vegetable bodies, and, by a vital process, decompose such bodies, and abstract from them and assimilate the elements which they require for their nutrition and growth. At the same time they increase and multiply very rapidly, and in turn become wafted about from place to place, ready and capable of effecting the decomposition of other quantities of dead organised materials. Again, the vaporous and gaseous products of the phenomena we are considering are the elements and compounds which the growing fungi and infusoria are incapable of utilising.

In proof of the correctness of the foregoing explanation of putrefaction, let me give you some slight notion of the kind of evidence sought for and obtained by Pasteur. For this purpose I will invite your attention to the two flasks and their contents which I now exhibit, and which have been used in imitating certain of Pasteur's experiments. More than three weeks ago I placed in each of these flasks about an equal bulk of milk freshly withdrawn from a cow. The milk, in both cases, was boiled for between two and three hours, for the purpose of destroying the vitality of any microscopic organisms it might have contained. The neck of one flask was loosely plugged, while the milk was still boiling, with cotton-wool which had been maintained at a temperature of 300° Fahr. for several hours, while into the neck of the second flask nothing was introduced. Now, you will observe in the first experiment the cotton-wool permitted the access of oxygen and the other gaseous components of the atmosphere, but prevented the ingress of germs, spores, and other solid bodies; and the result is, as you can all see for yourselves, that the milk has retained its original appearance.* Let us compare this result with that

* At the date of preparing this lecture for the press, viz., more than two

which has followed the exposure of the second quantity of boiled milk to air not filtered, but containing the organisms so frequently referred to, and you will notice that in this latter case putrefaction is actively progressing.

Here is some solution of a substance well known to everybody as being highly putrescible; namely, common glue. Six months ago this was boiled, the mouth of the vessel containing, and in which you now see it, was loosely closed with cotton-wool; still, after this lengthy period, it exhibits not the slightest indication of its being, or having undergone, any putrefactive change.*

These simple experiments, which are but crude examples of those instituted by Pasteur, illustrate the truth of the modern exposition of putrefaction, and demonstrate that it is not excited by atmospheric oxygen, but that the phenomenon is aroused into activity by what may be termed atmospheric germs and spores of animal and vegetable life. It must, moreover, be borne in mind that Pasteur performed his experiments in very many ways, under various conditions, and repeated them several times; notwithstanding which, he states that he invariably obtained the same results, so that the correctness of his conclusion can be open to very little, if any objection."

[The lecturer next briefly expounded the most recent views which are held respecting the processes of fermentation. He explained that the different kinds of fermentative phenomena are brought about by the activity, in some cases, of living microscopic plants, *e. g.*, the *torula cerevisiæ* or yeast plant; and in other cases by a living microscopic animal (?), *e. g.*, the *bacterium termo*. He also pointed out that, contrary to what was once believed, fermentation can occur and proceed in the absence of dead albuminous matters, provided a supply be furnished of ammoniacal and other compounds necessary for the nutrition and development of the animal or vegetable organism, which, as we have seen, are the causes or exciters of fermentation.]

"Now, when we reflect on the nature of these remarkable processes, and the character and power of the minute beings which give rise to them, the question naturally arises in our minds—may not certain of these minute but formidable creatures, or their germs, or both, which can be detected in

months after these experiments were commenced, the portion of milk here alluded to is still unchanged.

* For the opportunity of exhibiting this experiment, and the exceedingly beautiful specimen of carbolic acid placed on the table, I am indebted to my friend Dr. Crace Calvert, F.R.S.

the atmosphere, and which, therefore, are being constantly inhaled by animals, be the excitants or aggravaters of some of the epidemic and other diseases? On inquiry we shall find that although the evidence in this direction is, as yet, neither abundant nor conclusive, we have sufficient ground for believing that under peculiar conditions of the system certain maladies may be caused by the introduction into the body of the low forms of vitality to which reference has been so frequently made."

[Quotations were here made from the works of Drs. Parkes and Beale, and M. Daraine, to show partially upon what grounds eminent medico-scientific authorities founded their belief of the cause of disease being in some instances connected with living organised bodies existing in the air.]

"As it can be demonstrated that putrefactive processes are capable of charging our atmosphere with animal and vegetable beings which are *probably*, also with gaseous and vaporous bodies which are *certainly*, detrimental to the health of man and the lower animals, it becomes a matter of literally vital importance to devise means by which the development of these noxious products of putrefaction may be prevented, and when developed how they may be destroyed, or so altered as to render them incapable of doing harm.

The consideration of this branch of my subject leads me to speak of the *preventers of putrefaction* or *antiseptics*, and of *destroyers of infectious matter* or *disinfectants;* and from the many agents employed for these purposes I shall on the present occasion select for description only three of them, believing that for economy, efficacy, and facility of application they stand unrivalled: I allude to *carbolic acid, chlorine gas,* and *wood charcoal.*"

[The remainder of the lecture was devoted to explaining and experimentally illustrating the antiseptic powers of carbolic acid and of the disinfecting properties of chlorine and charcoal. Attention was directed to six bottles. No. 1 bottle contained the white and yolk of an egg divested of its shell; No. 2, the contents of an egg coagulated by heat. Nos. 3, 4, 5, 6, each contained the yolk and white of an egg mixed respectively with chemical equivalent weights of sulphite of soda, hyposulphite of soda, chloride of zinc, and carbolic acid. These experiments were commenced between three and four weeks prior to their being exhibited at the lecture, and it was demonstrated that all the eggs, except those to which carbolic acid and chloride of zinc had been added, were in advanced stages of putrefaction. A solution of glue mixed with $\frac{1}{3000}$th of its weight of carbolic acid was

shown to the meeting, which had kept perfectly sweet for six months. Chloride of zinc as an antiseptic is exceedingly powerful, and is a worthy rival of carbolic acid; but on account of the volatility and superior energy of the latter, it justly occupies the foremost place among bodies employed as preventers of putrefaction. It was then explained that an aqueous solution of carbolic acid (or of chloride of zinc) may be employed with advantage as a disinfectant by sprinkling it over the walls, floor, &c., of an apartment. For aërial disinfection it was suggested to impregnate the atmosphere of a room or stable with a solution of carbolic acid in water (or of chloride of zinc) by means of a spray distributer, such as that employed by Dr. Richardson in the production of local anæsthesia. Carbolic acid in small quantities is not prejudicial to health. On the contrary, it is said that in certain affections it comports itself both as a prophylactic and as a curative. (Various forms of spray diffusers were exhibited through the courtesy of Messrs. Krohne and Sesemann, of Whitechapel Road, and Messrs. Baker, opticians, High Holborn.) Disinfectants do their work in three ways: firstly, by absorbing or decomposing noxious gaseous and vaporous products of putrefaction; secondly, by killing the minute organisms which excite putrefaction, and which probably produce disease; and thirdly, by acting upon putrescible substances, so that they cannot be decomposed by the agents of putrefaction.

The lecturer now passed on to explain certain points of importance in connection with chlorine. He considered this agent, by virtue of its being a gas, and having the power to seek out for itself by diffusion* (*i. e.*, the natural property of gases to thoroughly intermingle with one another irrespective of difference of density) septic substances, and render them inert by chemically decomposing them.

Of course large volumes of chlorine could not be generated in apartments occupied by living animals, on account of the highly irritating qualities of the gas. Either such animals must be first removed, or else small continuous quantities of chlorine should be generated. For the latter purpose the common plan of sprinkling chloride of lime was advocated. For the preparation of large volumes of chlorine, such as would be required for the disinfection of uninhabited sheds, stables, &c., it was considered best to use a thin paste, made by mixing together in a saucer, plate, &c., powdered binoxide

* The technical meaning of this expression was illustrated by allowing chlorine to diffuse into hydrogen, air, and sulphuretted hydrogen.

(black oxide) of manganese and common hydrochloric (muriatic) acid. An error respecting one of the methods of liberating chlorine from common salt was next adverted to. It is very commonly supposed that when sulphuric acid is added to common salt, chlorine gas is disengaged; whereas a very different substance, hydrochloric acid, is obtained. This was illustrated experimentally, as well as the fact that in order to procure chlorine from salt, it must be mixed with black oxide of manganese in addition to sulphuric acid. The *modus operandi* of chlorine was fully explained.

Charcoal was the last disinfectant to which the lecturer referred. He said that by virtue of the porous nature of charcoal, it had the property of absorbing gases and vapours, in a number of cases to the extent of many times its own bulk. Charcoal could likewise absorb several gases at the same time, condense them, and cause them to act chemically upon one another. Thus, charcoal will absorb sulphuretted hydrogen and oxygen; and it will, moreover, induce the oxygen to unite with the hydrogen, and set the sulphur free. Here we have an instance of an offensive and highly prejudicial gas being converted into harmless materials by the activity of charcoal. For the absorption of gases, charcoal obtained from wood is much to be preferred to all other kinds.

A belief, justified by a considerable show of evidence, is entertained that the organic and organised products of putrefaction are acted on by charcoal in a manner similar to that in which this disinfectant behaves towards sulphuretted hydrogen, viz., that such products are absorbed and *burnt* by the oxygen contained in the charcoal into substances incapable of producing any ill effect on the health of animals. Attention was drawn to a glass jar on the bottom of which was lying a rabbit in a highly and visibly putrescent condition; a few inches above the rabbit was a layer of coarsely pulverised wood charcoal, supported by a diaphragm of perforated zinc; through the centre of the charcoal and diaphragm passed a glass tube, open at the lower end, which rested on the putrid mass, and closed at the upper end by a cork. The audience were invited to apply their noses to the upper surface of the charcoal, when it was noticed that the well-known odours of putrefaction were completely arrested by the charcoal. The glass tube above referred to was for the use of sceptics who might mistrust their eyes, as indirect means of ascertaining whether or not the rabbit was giving off the ordinary offensive products of putre-

faction, and who were therefore at liberty to remove the cork and smell down the tube.

Allusion was then made to the labours of the lecturer's former master, Dr. Stenhouse. To this eminent chemist we were much indebted, not only for most of the important facts connected with charcoal as a deodorizer and disinfectant, but also for the energy he had displayed in directing the attention of the public to its utility and the best methods of applying it to sanitary purposes.

Wood charcoal is pre-eminently adapted for preventing the escape into the atmosphere of poisonous and septic exhalations from masses of putrefying animal and vegetable substances. One of the best ways of disposing of animals killed by infectious maladies would be to bury them, so that they were surrounded on all sides by coarse fragments of charcoal. Charcoal does not preserve putrescible materials, as was once supposed, but according to recent experience appears to hasten decomposition. In any case, charcoal renders innocuous the emanations proceeding from the putrefying bodies it surrounds. Another mode of disposing of dead animals consisted in burying them in lime, which greatly facilitates the decomposition (not true putrefaction) of organised substances; and to make assurance doubly sure, the pit or grave might be covered with charcoal. Dried earth and many other materials might be, and are, employed as substitutes for charcoal, but are greatly inferior to it.]

Professor Tuson concluded by saying, that "of course, in a lecture like the present, it is impossible to do more than briefly dwell upon the divisions of a subject so extensive as that of putrefaction. Nevertheless, I hope that I have been, at all events, partially successful in giving you a clear, though imperfect, description of certain facts which not only possess a deep interest for all scientific and otherwise intelligent persons, but which also appear to be pregnant with the most valuable considerations for medical and veterinary medical men, as well as for every other individual engaged in the preservation and restoration of the health of our fellow-creatures and the lower animals. Should the sequel prove that my endeavours in this direction *have* been successful, I can assure you it will greatly enhance the pleasure I have derived from being permitted by the President and Council of this College to deliver the lecture to which you have done me the honour to listen."

MR. GREAVES AND THE ARMY VETERINARY SURGEONS.

Letter from Mr. G. Fleming, V.S., &c., 3rd Hussars, Aldershot.

June 15th, 1866.

Gentlemen,—I read with much pleasure and satisfaction the excellent remarks made by my friend, Mr. Greaves, of Manchester, at the meeting of the Liverpool Veterinary Medical Association held on the 11th of last May, and reported in this month's number of your invaluable Journal. No one can entertain a greater respect for the opinions of that gentleman, or believe more implicitly in the sincerity which prompts him to labour so hard and so earnestly for the advancement of our science, than myself. It is for this reason that one of his remarks has induced me to ask the favour of a corner in the *Veterinarian*, in order to correct an impression which seems to have, somehow or another, possessed him in reference to army veterinary surgeons, and I only hope he will consider me as acting from honest and friendly motives.

Speaking of the disease in the horse's foot, improperly denominated "canker," and its treatment, he says: "I grant you it is a dirty, nasty job, and makes your fingers stink not a little. The army veterinary surgeons, as a rule, delegate it to the regimental farrier. . . . . The army veterinary surgeon would consider it derogatory to him to use the searcher; but the veterinary surgeon in general practice is very differently situated. My experience has shown me that the practitioner is expected to take the searcher in his own hand, and to examine the foot himself."

Now I am not aware from what source Mr. Greaves has drawn his information, but I can hardly think it is a reliable one. In the first place, this so-called canker is not a disease among army horses—it has no existence in our stables. Eleven years' experience among light and heavy horses in the service has not afforded me a single case, nor yet the slightest approach to one; and the veterinary surgeon of a regiment who so far neglected his duty as to allow such a disreputable disease to occur in any of the horses in his charge would, I fancy, stand a good chance of forfeiting his commission. The malady, therefore, being one of that class which has been long banished from troop-stables by hygienic

measures, and by a correct appreciation of the treatment necessary to maintain the horse's foot in a healthy state, does not require to be delegated to the regimental farrier in consequence of its dirty, stinking character. Even the mild disease termed "thrush" is a rarity among our horses; and perhaps when some of our professional brethren in civil life put their veto against the destroying influences of the knife and the rasp, and are able to inculcate better stable management, the readily preventible "canker" will be a thing of the past.

Now for the army veterinary surgeon and the use of the searcher. I cannot remember ever having met a man in the capacity of veterinary surgeon to a regiment, battery, or battalion, who considered it derogatory to use the searcher, drawing knife, or any necessary instrument, if occasion required it. In these days of large camps, one has a pretty good opportunity of seeing and hearing of the doings of our *confrères* at some time or other, and I am unable to give credence to the statement that the army veterinary surgeon nowadays thinks it derogatory, or is unable, to comply with any professional demand, the same as the civil practitioner. A most important part of his duty consists in the instruction of the farrier-major and farrier-serjeants in those minor operations of the veterinary art which are required sometimes when troops are on detachment, or when the veterinary surgeon may be unavoidably absent; and I apprehend there are but few regiments in Her Majesty's service in which all or any of these men are unable to attend to the less serious injuries and diseases of the horses' feet. Of course this instruction is of importance to the veterinary surgeon, and may allow him to delegate the examination of a lame foot to one of these men; but it does not relieve him of the responsibility; nor yet, I am certain, would he think it derogatory, nor would his brother-officers, did he personally undertake the not often required operation of examining a suffering horse's foot in their presence. It is quite a mistake, for a moment to imagine such a thing; and an army veterinary surgeon, to stand well in a regiment, must be as expert and as free from false pride or vanity, as he who has to push his way, under different auspices, in civil life.

Is it generally known, that the veterinary surgeon who aspires to a commission in the British army has to pass a very severe and searching *practical* examination by practical men—a test of ability never applied to the newly inducted veterinary surgeon who is about to commence his career in town or country? And also that, unless this examination

be a *perfectly* satisfactory one, the unlucky aspirant has to defer the consummation of his desires until he has seen a little more practice?

Mr. Greaves will, I am confident, take in good part the objections I have offered to the only remark which, I think, is void of foundation in his speech. Justice demands that the army veterinary surgeon should not be thought above his duty, because it can with truth be affirmed that he is not; and the veterinary medical history of our cavalry and artillery amply testifies to the world the benefits that will assuredly follow the proper application of our science, when not opposed by ignorant and prejudiced men.

The other remarks having reference to preliminary examinations, the apprenticeship clause, and practical instruction at College, are all far too valuable to be sullied by the one I have somewhat unwillingly felt constrained to comment upon; and Mr. Greaves is too well known as a lover of truth and a friend to progress, for any one to accuse him of setting aught down in malice.

I am, &c.

The Editors of the 'Veterinarian.'

VARICOSE VEIN OF THE HOCK AND ITS BRANCHES.

By A. Owles, V.S., General Staff, Aldershot.

I am induced to send you the following short account of a varicose vein and its branches, believing such cases to be rare in the horse. As I have never seen the disease described by any author on horse pathology, I find myself unable to suggest any treatment beyond the palliative plan of the compress. Tying the vein suggested itself, but the possible consequences appear too formidable to risk in the absence of practical data for guidance. On the other hand, if the vein be left in its present state, and the animal continue at work, reasoning from analogy may we not predict the probable train of changes, even to ulceration of the vein, as a consequence? These are points for consideration before deciding for or against an operation to obliterate the diseased vessel. I doubt not that some of your readers will kindly throw a light upon these and other points connected with this subject, and thus add to the value of your useful Journal.

The history of the case, as far as I can obtain it, is briefly this:—The horse belongs to a medical officer, is a large animal, and used for carriage work. About six weeks ago, the animal was observed to have a swelling on the outside of the off hind leg, below the hock. It consisted of a number of puffy, circular enlargements, connected to each other by what appeared, at first sight, to be merely an ordinary fulness just anterior to the tendons. The vein, in its situation on the posterior and outer part of the hock, was, for about two inches, distended to several times its natural size, and felt hard. Rest being enjoined, and the use of cold wet bandages, the swelling was soon reduced, excepting at the hock, and even in that situation was so much lessened as scarcely to attract notice; but directly the horse resumed his work, the vein became again distended, and the irregular swellings re-appeared below the hock. At no time has there been either tenderness or lameness; soon the saphena vein above, and its muscular branches, became distended also. Rest and bandages suffice to reduce the swelling in a few days, but work at all times causes it to return.

Simply holding up the fore foot of the affected side is followed by a filling of the diseased vessel in the manner above described.

AN UNEXPLAINED OUTBREAK OF CATTLE PLAGUE.

By Messrs. Norfolk and Bulmer, M.R.C.V.S., Dover.

A remarkable instance of cattle-plague came under our notice this day, June 18th, which deserves, in our opinion, a place in the annals of veterinary medicine.

Before relating the facts of the case, it will be better to state that the disease has been absent from this neighbourhood for many months, and we had trusted that the various Orders in Council respecting the moving of animals from place to place in the country would have entirely stopped its ravages. No doubt these precautions have been of great use; but in spite of them, and all that has been written and said on the subject of its never arising spontaneously, we this day witnessed a case on the premises of Mr. Palmer, of Reech Court Farm, near Dover, which would make us hesitate to speak positively on the point. Mr. Palmer informs us that no fresh stock had been on his premises for the past eight

months; that his cattle had always been turned out on the Downs, close by the sea—being nearly two miles from any highway; and that they had never been off the farm, nor had any neighbouring farmer's stock been near them. As no disease has existed in this part of the county for such a length of time, we are totally at a loss to account for the outbreak. Our client has lost two animals, aged, respectively, fifteen months and two years. The remaining animals, at the time we write, appear to be perfectly healthy. The symptoms and *post-mortem* appearances we need not mention, as they were so marked that no *duly qualified* veterinary surgeon could possibly mistake them. We have made all possible inquiries respecting the cause of the outbreak, and cannot trace it even to a *supposed* case of contagion. We are firm believers in cattle-plague being a most contagious disease, and until now have never seen a case which we could not trace to this cause. We may add, that but few cattle are kept in the immediate neighbourhood, and none of them have been newly purchased.

One object we have in view in sending this case is to ask if any of your readers can throw any light on its cause; and another, that of inducing them to publish analogous cases, if such should have come under their notice.

ON THE WANT OF PRACTICAL KNOWLEDGE.

By Charles Holt, M.R.C.V.S., Darlington.

I am daily becoming more convinced of the want of practical knowledge amongst the majority of the junior members of our profession, which I consider to be one of the principal obstacles to the onward progress of veterinary science, and calculated to instil an unfavorable opinion of us as a body in the minds of every one at all conversant with the habits and diseases of domesticated animals. To me the words "professional man" have something in their very sound that would lead one to expect that whatever is taken in hand by an individual member of a profession would be executed in a scientific and proper manner, and that nothing would be left undone which would in any way leave an opening for improvement by any who had not had the advantages of a scientific and practical education; and such, you will readily admit, is expected of us as a professional body. But I consider that we are sadly deficient in the

practical part of our profession, and in knowledge of the habits of domesticated animals when in health, which we are called upon to treat when affected by disease in all its varied forms.

I can conceive nothing more annoying to a veterinary practitioner, or more calculated to lower him in the estimation of his employer, than a want of the necessary knowledge of the active and apparent duties of our art.

I know there are many young men who commence practice that have not made themselves practically acquainted with the method of performing many of the operations which it is absolutely necessary they should be thorough masters of; for they will frequently be requested to operate, and that sometimes for the sole purpose of testing their capabilities. By blundering at the onset at operations that will of necessity fall to their lot to perform in the daily routine of practice, will lead to an unfavorable opinion being formed of their talents which may take many years to efface.

Having had some of these difficulties to overcome myself when I first commenced practice, I can speak feelingly, and am certain that the practical part of our duties has not hitherto received so much attention at our hands as its necessity demands.

Everything is rapidly progressing around us, and discoveries are almost daily made in the sister professions of human medicine and surgery, and I am sure we shall all be neglecting a most important duty if we do not strain every nerve to keep pace with the rapidly increasing spirit of the times.

If we look round amongst the members of our profession who have won for themselves a good reputation, we shall, in many cases, find that they are men of practical knowledge, who are never afraid to operate when necessary, and where medicinal means alone have failed to effect a cure. In acute laryngitis, when suffocation is apprehended, the operation of tracheotomy is always necessary to save our patient: also in hydrothorax, cystic calculi, the various kinds of hernia, and in many other diseases, a surgical operation is essentially necessary to restore the animal affected to a state of usefulness, independently of being the means of saving its life.

In speaking of the importance of practical knowledge, I need scarcely remind your readers of the great utility of being thoroughly acquainted with the art of shoeing horses, and the mode of paring the foot, both in its healthy and diseased state; for the advantages of such knowledge must be apparent to every one, and particularly to those who

are established in large towns, where lameness and diseases of the foot form the principal part of their practice.

I do not wish it to be inferred that I consider practical knowledge alone sufficient to enable us to discharge the duties of our profession, but am confident that were we to devote more time to the study and acquirement of sound practical knowledge before entering the College as pupils, we should give greater satisfaction to our employers and have more confidence in our own capabilities, and in every way be benefited by a more searching investigation into the mysteries of this, the most important branch of veterinary science.

I am aware that we have made great progress during the last fifty years, and that much has been done towards promoting the interests of the profession; though there have often been obstacles thrown in our path which, I hope, ere long will be removed for ever. I allude to the monopoly of our rights by individuals who have never undergone the necessary preparation for the study of veterinary medicine. But, as knowledge advances, ignorance and empiricism will assuredly retreat; therefore let us study to be proficient in everything relating to our art, and show our superiority in the knowledge necessary for the carrying out of any and everything connected with it, and our endeavours will be sure to be appreciated.

Some men are naturally better adapted for certain professions and trades than others, and this, I am certain, applies to the members of our profession; and my opinion is, that unless a man is cut out for it, he will never succeed in practice, however bright may be his talents. We should be born to the profession, that is, we should from almost our infancy be so situated as to make ourselves thoroughly acquainted with the habits and proper management of those animals that in after-life we shall have so much to do with when they are affected by disease. Thus, I consider that the son of a veterinary surgeon or agriculturist has many advantages in his youth that will fit him for the study of veterinary science—that is, if he avails himself of them, and is in other respects adapted for the profession. But there are many qualifications of which every one who intends to study the veterinary profession will, at some time or other during his career, stand in need of; and amongst these I deem it indispensable that we should be good judges of the different kinds of horses, as our opinion will frequently be solicited if it is considered worth having. We should, in fact, be thoroughly conversant on every point relating to the horse, both

in health and disease, never losing sight of the value of practical knowledge, without which we can never attain to anything like perfection, or receive that meed of praise and support from the public which it ought to be the ambition of every right-thinking veterinary surgeon to strive for.

In conclusion, I would urge upon all the necessity of endeavouring to improve themselves, since ours is a profession that calls for reflection, and one in which we may daily learn something to our benefit, even to the last, by studying the works both of nature and art that surround us on every side connected with it. Therefore let us never allow what knowledge we are already in possession of to gradually moulder away, but, by constantly adding to our store of knowledge, show that we are anxious to do our utmost for the advancement of veterinary science.

THE WANT OF HARMONY BETWEEN HOMŒOPATHIC THEORY AND PRACTICE.

By J. P. Berry, M.R.C.V.S., Northampton.

I have presumed on your kindness in soliciting permission to reply to Mr. Williams's observations on the supposed want of harmony between homœopathic theory and practice, as illustrated by the symptoms produced by *aconite*, and its employment in the treatment of inflammatory diseases.

The apparent contradiction has arisen from his having overlooked the fact, that "quickened pulse and increased respiratory movements" are symptoms belonging to the second stage of the disease; and that they are invariably preceded by a chill of varied intensity and duration.

Also, that "failure of the pulse" is a primary symptom, produced by the actions of aconite upon the vascular system; and therefore it is homœopathic to the earliest stage of inflammatory fever.

In cases of partial poisoning by aconite, the secondary symptoms are often well marked; the pulse in the human subject having, in some instances, risen to 125 beats in the minute. One of the most interesting cases illustrative of my statements is reported in the *Medical Gazette* of Paris, January 5th, 1844.

Dr. Charles Hempel, of New York, has the following appropriate remarks on this subject:

"It is well known that aconite has both the chill and the

heat and dryness of the skin, together with the bounding pulse, and that it is, therefore, equally homœopathic to the primary as well as to the secondary symptoms of fever. In the books, aconite is generally recommended for the secondary symptoms only, namely, for the bounding pulse, heat and dryness of the skin, thirst, &c. It might therefore seem, if we were called to a patient who was still under the primary chill, as though aconite could only be administered upon the principle of *contraria contrariis;* but this would simply be a seeming antagonism, for aconite would not only hasten the vital reaction, but might have to be continued after this reaction had fully set in, until the primary as well as the secondary phenomena of the malady should have been subdued." "Aconite acts best in diseases that disappear after the breaking out of critical sweat." "If aconite could be given in the very commencement, before the disease has had time to develope a local inflammation, this localization might be prevented in many cases."

Facts and Observations.

Mr. Armatage, late Professor of Materia Medica in the Albert Veterinary College, has been appointed Professor of Anatomy and Physiology in the Veterinary College, Glasgow.

Mr. W. S. Moore, M.R.C.V.S., has been appointed, by the lord lieutenant of the county, Veterinary Surgeon to the 1st Newcastle-on-Tyne Artillery Volunteer Corps.

Cotton Seed Oil.—From fifteen to eighteen per cent. of a fixed oil may be obtained from cotton seed, which is cheaper than linseed oil, and answers well for paints and varnishes, and makes excellent soap. When refined, it is considered but little inferior to olive oil.

Heat and Motion.—It is well known that when a bullet strikes a target, and is stopped by it, both are beat. Professor Tyndall states, that if the centrifugal motion of the earth ceased, it would fall into the sun, and the amount of heat generated by the blow would be equal to that developed by the combustion of 5600 worlds of solid carbon.

Theory of Fermentation.—M. Béchamp is of opinion

that alcohol is a waste product of the yeast plant. His idea is, that the plant first of all transforms sugar into glucose by means of a peculiar ferment, which he calls *zymase;* it then assimilates the glucose and grows; finally, it throws out the alcohol and other compounds usually called products of fermentation, just as animals throw out waste products, such as urea, &c. As a confirmation of this idea, M. Béchamp states that the yeast plant throws out alcohol when not in contact with sugar or any fermentable material.

Effects of Ozone on Animals.—Dr. W. Ireland, experimenting on animals with ozonized air, finds—

1st. Ozonized air accelerates the respiration, and, it may be inferred, the circulation also.

2nd. It excites the nervous system.

3rd. It promotes the coagulability of the blood, probably by increasing its fibrine. In the blood, however, ozone loses its peculiar properties, probably entering into combination with some of the constituents of the circulating fluid.

4th. Animals can be subjected to the influence of a considerable proportion of ozone in the air for hours, without permanent injury; but, in the end, ozone produces effects which may continue after its withdrawal, and destroy life.

Nitrous Oxide Gas as an Anæsthetic.—Dr. Cotton, of Canada, has lately advocated the use of nitrous oxide as an anæsthetic agent in operations not requiring any great length of time to perform, and in dentistry, and he considers it preferable to both chloroform and ether, while it may be used without any apprehension of danger to the patient.

Bichloride of Carbon as an Anæsthetic.—Dr. Simpson, referring to the action of this compound, says its primary effects are very analogous to those of chloroform, but it takes a longer time to produce the same degree of anæsthesia, and generally a longer time to recover from it. Some experiments performed by him on mice and rabbits have shown this—two corresponding animals in these experiments being simultaneously exposed, under exactly similar circumstances, to the same doses of chloroform and chlorocarbon. The depressing influence of chlorocarbon upon the heart appears to be greater than that of chloroform, and consequently it is more dangerous to employ it as an anæsthetic agent. This, however, causes it to be a better local sedative, since its action is less stimulating and irritating than chloroform when externally applied.

Microscopic Plants the Cause of Ague.—In the month of May, 1862, ague was very prevalent in the malarial district of Ohio and Mississippi valleys. Dr. Salisbury then undertook a series of investigations with a view to determine whether the expectoration of the patient contained vegetable growths. He observed that the damp season had been followed by a particularly dry one, so that those localities which were at first swampy became dry, and that the streams became lower and more full of vegetation. He commenced his experiments by examining the mucous secretions of those patients who had been most submitted to the malaria, and in these he detected a large amount of low forms of life, such as Algæ, Fungi, Diatomaceæ, and Desmidiæ. At first he imagined that the presence of these organisms might be accidental, but repeated experiments convinced him that some of them were invariably associated with ague. The bodies which are constantly present in such cases he describes as being "minute oblong cells, either single or aggregated, consisting of a distinct nucleus, surrounded with a smooth cell-wall, with a highly clear, apparently empty, space between the outer cell-wall and the nucleus." From these characters Dr. Salisbury concludes that the bodies are not fungi, but belong properly to the algæ, in all probability being species of the genus Palmella. Whilst the diatomaceæ and other organisms were found to be generally present, the bodies just described were not found above the level at which the ague was observed. In order to ascertain exactly their source, he suspended plates of glass over the water in a certain marsh which was regarded as unhealthy. In the water which condensed upon the under-surface of these plates he found numerous palmella-like structures, and on examining the mould of the bog he found it full of similar organisms. From repeated researches Dr. Salisbury concludes—(1.) Cryptogamic spores are carried aloft above the surface at night, in the damp exhalations which appear after sunset. (2.) These bodies rise from thirty to sixty feet, never above the summit of the damp night-exhalations, and ague is similarly limited. (3.) The day air of ague districts is free from these bodies.—*London Review.*

The Cause of Goitre is said by M. Maumené to be the presence of fluorides in the water of certain localities. He has proved this experimentally. He gave a dog fluoride of potassium for five months, and at the end of this time he noticed a peculiar swelling in the neighbourhood of the neck. His experiments were not then continued further, owing to

the escape of the dog; but when the animal was recaptured, some three years afterwards, the swelling was still as apparent as at first, though M. Gaillet, a Rheims physician, did not think it sufficiently prominently marked to justify him in calling it goitre. M. Maumené states that in all countries where goitre is prevalent fluorides prevail in the waters.—*London Review.*

The Nutrition of Plants.—In an essay upon the physiological history of shrubs, M. Arthur Gris, after entering upon an account of his numerous investigations, states the following conclusions:—1. That the nutritive substances of the plant occupy the starchy tissues of the trunk during the greater part of the year. 2. That the time during which these tissues are devoid of them (nutritive principles) is of very short duration, and should be measured by days rather than months. 3. That the starch which is developed during the summer undergoes no change while the fruit is ripening. 4. That there are only two great processes connected with the nutritive matter of trees—the formation of these matters during the summer, and their resorption in the spring.

Trichiniasis.—Experiments have latterly been made at the Veterinary School at Berlin, and formerly at Halle, on the subject of transplanting trichines from one animal to another. Four pigs were used for this experiment. A report was made upon the experiment, from which it appears certain that animals fed with meat diseased with trichines soon have the disease in their own bodies. The animals were fed daily upon trichine meat; they soon became ill, and three of them died within twenty-seven to thirty-seven days; the fourth recovered, but it was proved on removing some of the flesh that the animal was full of trichines. A sort of trichine insurance was consequently established, starting with the idea that the spread of the disease would receive a considerable check if the possessor of a diseased animal were to receive a compensation on the announcement of the animal being affected with trichines. This insurance only depended upon the goodwill of the people; and as there were no funds at hand for the statistical calculations or for the requisite subscriptions, another plan was suggested as acceptable, viz., every pig in the country that was killed should be taxed one silver groschen (1¼d.), from the proceeds of which tax the possessors of trichine-diseased pigs should receive compensation. This would give a security that meat diseased in that way would not be further used for injurious purposes, as food for other animals, &c.—*Journal Society of Arts.*

THE VETERINARIAN, JULY 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE DIFFERENCES BETWEEN THE INORGANIC AND ORGANIC KINGDOMS OF NATURE.

Not long since we ventured to enter upon the consideration of the Vital Principle, although we could not arrive at any satisfactory conclusion respecting its abstract nature. The present subject will be seen to bear upon the same inquiry. We offer no apology for the introduction of these investigations, which are considered by some persons as mere speculations—questions altogether beyond the power of man's comprehension, because we believe them admirably calculated to awaken thought, and to call forth the powers of the mind, even though it be that we are unable to understand or explain them.

That there is a remarkable difference between the organic and inorganic kingdoms of nature is incontrovertible. A broad chasm seems to exist between some bodies, while among others so close an alliance obtains as almost to cause them to merge the one into the other, and it therefore becomes extremely difficult to draw a line of demarcation. It is true—and this has been accepted as the cause of these differences—there is the presence of life in one kingdom, and its absence in the other. Still this is not considered altogether satisfactory, as certain forces are known to exist alike in both, their identity being proved; and that these forces are also in operation throughout nature there can be no question. We see them demonstrated by their effects; they are "behind and above all visible phenomena, moulding them into forms of infinite variety, of all which forms the only real knowledge we possess lies in the perception of the ideas there expressed, of their beauty, or their fitness, in short, of their being all the work of 'Toil co-operant to an End.'"

Among the theories of the day it is gaining ground that

all the so-called physical forces are but modifications of one and the same power. This theory was first broached by Pollock. Whatever this may be, it is thought to be the cause of the mutual attraction of the planetary bodies, and of particles of matter, however minute; it gives rise to light, warmth in the sun, moves in the animal and vegetable organizations, and under certain conditions excites electrical and the allied forces.

It has been stated that never since Lord Bacon's time has there been a greater licence given to hypothesis than in this our day. Many have set themselves up as world-makers, and are as busy as the old Greek philosophers about cosmogonies; about the origin and evolution of all things; about the possible gestation of the universe from its first embryo condition; the primary elements out of which all things have been evolved; whether there need have been any such thing as "creation" proper, or any "beginning" at all; whether the "primordial forms" of all animated nature need have been more than three or four, or even more than one; and whether all species of creatures may not have been developed out of, or transmuted into, one another. Such investigations carry us beyond the sphere of experience into regions transcendental to it, and have been prescribed as not belonging to genuine science at all. "Subjects in which man, merely as *man*, with his merely natural *organa* of science, cannot hope to know, and, at best, can but conjecture."

It will be borne in mind that life is the cause of organization, not the result. It is, therefore, a force of some kind, by whatever name it may be called, which precedes organization, and builds it up. This, according to Professor Huxley, is beautifully seen in the animals called Foraminifera, which are mere blobs of jelly, seemingly without structure of any kind, yet in this jelly there works a force capable of building up an organism of complicated and perfect symmetry. Still the question returns, What is this vital force? "It is," says the Duke of Argyll, "something which we cannot see, but of whose existence we are as certain as we are of its visible effects—nay, which our

reason tells us precedes and is superior to these." The same authority, writing on the 'Reign of Law in the Universe,' says, "It is certain that nothing is known, or has been guessed at, in respect to the history and origin of life, which corresponds with law in its strictest and most definite sense. We have no knowledge of one or more forces—such as the forces of gravitation, or of magnetic attraction and repulsion—to which any of the phenomena of life can be referred. Far less have we any knowledge of any such laws which can be connected with the successive creation or development of new organisms. Professor Huxley, in a recent work, has indeed spoken of 'that combination of natural forces which we call life.' But this language is purely rhetorical. I do not mean to say that life may not be defined to be a kind of force, or a combination of forces. All I mean is, that we know nothing of these forces in the same sense in which we do know something of the force of gravity, or of magnetism, or of electricity, or of chemical affinity. No such knowledge exists in respect to any of the forces which have been concerned in the development of life."

Dr. Carpenter demurring to the oneness of the forces operating in the living body and those acting in the inorganic universe, observes that a more scientific spirit prevails among physiologists at the present day, who, while they fully recognise the fact that many of the phenomena of the organism may be accounted for by the agencies, the operation of which is existant in the world around, they separate into a distinct category—that of *vital* actions—such as appear to differ altogether *in kind* from the phenomena of physics and chemistry; and seek to determine, from the study of the conditions under which these present themselves, the *laws* of their occurrence.

He goes on to observe, if we inquire what it is that essentially distinguishes vital from every kind of physical activity, we find this distinction most characteristically expressed in the fact that a germ endowed with life develops itself into an organism of a type resembling that of its parent; that this organism is the subject of incessant

changes, which all tend in the first place to the evolution of its typical form, and subsequently to the maintenance of that form, notwithstanding the antagonism of chemical and physical agencies which are constantly tending to produce its disintegration; but that as its term of existence is prolonged, its conservative power declines, so as to become less and less able to resist these disintegrating forces, to which it finally succumbs, leaving the organism to be resolved by their agency into the components from which its materials were originally drawn. The history of a living organism, then, is one of *incessant change;* and the conditions of that change are to be found partly in the organism itself, and partly in the external agencies to which it is subjected. That condition which is inherent in the organism, being derived principally from its progenitors, may be conveniently termed its *germinal capacity;* its parallel in the inorganic world being that fundamental difference in properties which constitutes the distinction between one substance, whether elementary or compound, and another; in virtue of which each "behaves" in its own characteristic manner when subjected to new conditions.

Dr. Macadam has well observed, "In all these processes (connected with life) no doubt there is much of a mysterious nature, and much which we cannot comprehend, and may be never able to do so. What vitality is in essence is beyond our view. We can observe its mode of action—to some extent we can control its mode of action by the administration of food and medicine, and by external process, but we can never originate it. We can create nothing, and when once life forsakes the plant or the animal, all the cunning devices of man fail to influence its movements, and are powerless to restore it. Thus we see, not only how fearfully and wonderfully we are made, but are taught the lesson how marvellously well each part of nature performs its allotted part, and how nicely balanced are all created things."

It has been said, science has done nothing—perhaps never will do anything in the way of showing how life began; but having certain living beings before us, we can

trace their offspring from their first germs to their completest forms. We do not know how or why life is connected with organization; but whenever organization with which it is connected either builds up or takes to pieces a chemical compound, we have good reason for believing that it does so in a manner analogous to that which a chemist can employ. Already the chemist can make a great many of the peculiar substances found in living beings; but if he could make them all, he would not therefore be able to produce living beings. He would simply have imitated certain processes which such beings perform, and as in the legend of Prometheus, the fire from heaven would be still wanted to complete his work. The mystery of life is beyond the reach of physical science. Certain it is that what is called spontaneous generation will not explain it—a "fortuitous aggregation of particles."

We have before expressed our belief in the axiom "*Ex nihilo nihil fit*," and stated that we would as soon believe in the spontaneous generation of a man as a monad, of an oak as of the lowest conferva. We believe most firmly in an All-creative Power, acting in accordance with His own laws; and to account for the formation of an atom is as great a puzzle as to explain the creation of a world.

Dugald Stewart has said, "The order we see not only implies intelligence in its first conception, but power by its continued existence; or in other words, it is the same Being who *enacts* and *executes* the law."

After all the theories advanced respecting life, to LIVE is doubtless the main thing. "A living dog is better than a dead lion," we are told; and the smallest lichen that creeps on the Alpine rocks rises in importance above the Alps themselves, yea, above the entire universe of *dead* matter of which the Alps form only a small part. But then, the manner in which life shall display itself is a subject of no small consequence; for we all know that life may be so "cribbed, cabined and confined" as to be practically useless; or it may be so loose and lawless as speedily to exhaust itself. 'Tis well, therefore, to have the mind so disciplined and taught as to exemplify the line of the poet—

"A life devoted to life's duties."

We feel convinced, were the mind of man capable of apprehending it, that what in nature is seemingly complex is really simple; what is mysterious plain, and throughout the whole exists harmony. Beautifully has Dryden sung—

> "From harmony, heavenly harmony,
> This universal frame began;
> From harmony to harmony,
> Through all the compass of the notes it ran,
> The diapason, closing full in man."

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

A Manual of Medical Jurisprudence. By Alfred S. Taylor, M.D., F.R.S. Eighth edition. London: John Churchill & Sons.

It affords us much pleasure to notice this work from the prolific and facile pen of Dr. Taylor, as it contains a great amount of information of the highest importance, not only for those pursuing human medicine, but likewise for those who, like the majority of our readers, are students or practitioners of the veterinary art. In making this statement we do not refer solely to the medico-toxicological and chemico-toxicological parts of the book, in which we find lucid and ample descriptions of the symptoms and *post-mortem* appearances produced by poisons, and of the processes by which such substances are discovered and identified, but we also allude to many of the topics discussed in the exceedingly interesting introductory chapters — such, for example, as "Rules for Observing Alleged Cases of Poisoning," "Identity of Substances," "Preserving Articles for Analysis," "On the Use of Notes," "Medico-legal Reports," "Examination of Witnesses," "Medical Evidence," &c.

By way of illustrating the kind of information, valuable alike to the physician, the surgeon, and the veterinarian, to be met with under the foregoing heads, we proceed to direct attention to two extracts selected more or less at random. The first is taken from the subject entitled, "Preserving

articles for analysis" (page 11). "In removing viscera or liquids from the body, and reserving them for analysis, it is necessary to observe certain precautions. A clear vessel with a wide mouth should be selected; it should be only sufficiently large to hold the organ or liquid (the less air remaining in it the better); it should be secured by a closely-fitting cork, covered with fine skin or bladder. Another piece of skin should then be tied over the mouth, or, for this, sheet caoutchouc or gutta-percha may be substituted with advantage. It should, lastly, be covered with tin-foil, and a layer of white leather. In this way any loss by evaporation or decomposition is prevented, and the viscera may be preserved (in a cool place) for some time. If the mouth of the vessel be too wide for a cork, the other articles cannot be dispensed with. Paper only should not be used; I have known the appearances after death of the viscera of an infant, suspected to have died from poison, entirely destroyed by drying, from the evaporation which took place through the layers of paper with which the vessel in which they were contained was covered. The practitioner should bear in mind that all these matters are likely to come out in evidence; and whatever is worth doing at all is worth doing well. For reasons already stated, antiseptic chemical compounds should not be used. The addition of a small quantity of chloroform to the viscera will, without complicating the analysis, tend to preserve them. The articles used for the preservation of viscera should be in all cases scrupulously examined; some kinds of calico are dressed with arsenic and starch paste, and many kinds of wrapping-paper as well as wall-papers are strongly impregnated with this poison. * * * Nearly all wall-papers having any tinge of green or golden-yellow in them contain arsenic, and this arsenic spreads by imbibition to other parts of the paper not so tinted."

The next quotation is taken from page 36, where our author treats of the manner in which medical men should comport themselves when giving evidence in courts of law. After referring to other matters of great importance to the medical witness he says—"The replies should be made in simple language, free from technicality. If medical men could be made aware of the ridicule which they thus bring on their evidence, otherwise good, they would at once strive to dispense with such language. A witness is perhaps unconsciously led to speak as if he were addressing a medical assembly, instead of plain men like the members of a common jury, who are wholly ignorant of the meaning of medical terms, and barristers who are but imperfectly

acquainted with them. There are few assizes which do not afford many illustrations of the injury done to scientific evidence and the clear understanding of a case, by the technical language in which it is given. * * * On a trial for an assault which took place at the assizes, some years since, a surgeon, in giving his evidence, informed the Court that on examining the prosecutor he found him suffering from a severe contusion of the integuments under the left orbit, with great extravasation of blood and ecchymosis in the surrounding cellular tissue, which was in a tumefied state. There was also considerable abrasion of the cuticle. '*Judge:* You mean, I suppose, that the man had a black eye. *Witness:* Yes. *Judge:* Then why not say so at once?' * * * This is not science, but pedantry, and if such language is employed by a witness with a view of impressing the court with some idea of his learning, it wholly fails of its effect."

We conclude our notice of Dr. Taylor's 'Manual of Jurisprudence' by again referring to the fact that, although written for the use of the professor of human medicine, it is replete with matter which every veterinary surgeon should study and make his own on account, omitting other reasons, of the practical benefit the possession of such knowledge will be to him. We deem it a duty to state that with regard to printing and paper the work is well got up; and we are pleased to observe that it has cut edges, an innovation which we heartily trust will become the custom and not, as it now is, the exception.

Extracts from British and Foreign Journals.

REPORT ON MURRAIN.

By George Armatage, M.R.C.V.S., late Veterinary Surgeon to the Marchioness of Londonderry, and Professor of Anatomy and Physiology in the Glasgow Veterinary College.

Reprinted from the Highland Society of Scotland's 'Transactions.'

Premium—The Gold Medal.

Murrain—or, as it has been variously denominated, enzootic aphtha, and epizootic aphtha by continental writers; eczema and epizootica of Professor Simonds; and in the

vernacular, foot and mouth complaint; epidemic; the blister, &c. &c.—is an exanthematous or eruptive febrile disease of horned cattle, possessing contagious characters, by which it is capable of propagation and communication to man under certain circumstances, and most other animals.

Like all diseases of similar characters which appear in man and the lower animals, murrain is considered liable to attack an individual only once in its lifetime; this, however, is erroneous, as well authenticated instances prove that animals have suffered more than once from its effects, but, as a rule, not by any means so severely, although exposed to influences of a specially extreme character.

Its contagious and infectious properties are truly verified in the numberless instances in which the symptoms are so speedily exhibited in cattle on farms where others are introduced labouring under the affection, horses, pigs, dogs, and even fowls* not escaping; and by the rapidity with which it is communicated from one herd to another in the vicinity. This depending—as in all highly contagious diseases—upon the blood being primarily affected through absorption by the lungs or mucous surfaces, inoculation, &c., which developes a poison the true nature of which is unknown, communicable by the natural secretions, or resulting diseased product in its true type to other animals. The poison of aphthous disease, no matter how conveyed, is not only very delicate, but permanent in its general characters, as evidenced by the fact that animals become affected when turned upon pastures or into byres where diseased cattle have not been for some considerable time.

The distinguishing characters of murrain are, however, variable in their intensity; at times being comparatively mild, at others virulent; and as such it has been styled "malignant epidemic" by older writers—Government being aroused by its nature and tendencies to issue its first legislative enactment with reference to it in March, 1745. But within the past twenty years, although it has prevailed to such an extent that the three kingdoms may be said to have never been free, it has doubtless mainly arisen from the importation of foreign cattle—being propagated by contagion. In various private communications from veterinary surgeons in active cattle practice, received by the writer, Irish and Dutch cattle are said to have much to do with the prevalence of the disease in this country.

Although it cannot be said the mortality from the attacks of murrain is so great as its prevalence and nature would at

* *Veterinarian*, September, 1864, p. 661.

first sight lead us to suppose, it is productive, however, of serious losses, especially to the dairy owners of large towns, and the districts near London, where stock is frequently changed or added to from markets; farmers and others also complain of the frequency with which they have to battle with the affection, either as an interruption to the process of fatting, or milking properties; in which latter case all symptoms are increased in their severity, and fatal termination by complication with other diseases as a result of irritative fever always to be dreaded.

Symptoms.—These vary to some extent in their general aspect in proportion to the habits of the animal affected, characteristics which may be said to be common to certain species, and also to some extent with the mode in which the poison is introduced to the system.

A brief period of incubation occurs, which may vary from one to four or five days, when probably a short, dry, husky cough may have been noticed; a fit of shivers supervenes, the animal is dull, and if he is in the pasture is found apart from the rest; the coat stares, and temperature of the body variable and unequal.

If the hand be passed over the spine the animal winces, and if the skin be included in the pressure of the fingers he crouches, and evinces great tenderness. The pulse is accelerated; appetite capricious; a ropy saliva drivels from the mouth, which rapidly augments in quantity; he smacks his lips, symptoms which denote the formation of large and well defined vesicles—from the size of a pea to that of half-a-crown in some instances—on the tongue, which is swollen, and sides of the mouth and lips, and sometimes on the nose and Schneiderian membrane, from which intense pain is given. In a few hours they burst, and expose red and extremely sensitive patches, giving exit to a thin serum containing all the elements necessary for the communication of the disease to another animal, in favorable cases being quickly covered by epithelium. About the fifth or sixth day the animal begins to take his ordinary food with a tolerable degree of ease, considering the severe state which the mouth has exhibited.

Sometimes the feet are also attacked in conjunction with, or prior to the mouth being affected, when the animal persists in lying down, or stands with the back arched, in evident pain and distress; the coronets are covered with vesicles which extend to the interdigital spaces and around the heels, requiring but very slight pressure to cause them to discharge

their contents. Accelerated respiration and circulation, with intense pain, lameness, and inability to stand, swelling, with great heat and tenderness, are the early symptoms; which, aggravated by the general uneasiness of the animal and vascular nature of the parts under the affection are succeeded by sloughing of the integuments, or hoof, or both, exposing bones and subjacent tissues—the latter perforated by sinuous abscesses.

If the disease assumes a mild vesicular character in old animals, and proper precautionary measures are resorted to, the febrile symptoms will subside about the fifth day; but when the patients are young, especially when drawing naturally their food from the teat, or fed upon milk from cows whose glands are affected, and in milch cows, not only do we find the severity of the symptoms increased, but complications of more or less obstinacy to deal with.

Young sucking animals suffer from the mouth, fauces, gullet, and digestive canal becoming implicated in the vesicular eruption, the irritation and soreness from which prevents the taking of sufficient food; colic and diarrhœa add to the general systemic disturbance, quickly carrying off the creature.

In milch cows the teats are involved with the mammary gland, which becomes hot, swollen, and painful; the vesicles are burst in the process of milking, or by the sucking calf, exposing raw surfaces, which, however, speedily dry, the scab from which is removed each time by the hand of the milker, giving rise to greater pain, and rendering the animal opposed to the operation; the milk is retained, and by its presence acts as a foreign body, creating inflammation within the gland.

All symptoms now assume an aggravated form, and great agony is exhibited as complications occur. Fever is increased, as also are the respiration and circulation; the heart may be heard in some instances to beat many paces distant; ulceration and sloughing succeed the tumefaction of the phalanges; the back is arched as the animal stands agonisingly foaming at the mouth, champing and smacking; the breath is fetid, salivation copious, and mixed with blood; eyes bloodshot and protruded; matter forms within the mammary glands, resulting in obliteration of one or more, or all the quarters, and possibly total removal by mortification, during the process of which the lungs, from irritative fever, are seriously involved; the virus of gangrene is absorbed, prostration ensues, hoofs slough off, and with them bones, leaving the creature the alternative of a stump; blood becomes impure, and doubly

so from imperfect aëration of the lungs; nervous power declines, which is succeeded by coma and death. In some cases suppuration takes place from large swellings in various parts of the body, as the shoulders, loins, hips, &c., from which the skin sloughs off, exposing deep vacant places in the muscles, giving exit to large quantities of matter, and as tardy in their healing powers as in their previous maturation.

In sheep the loss of condition is rapid, and early succeeded by thorough emaciation, and prostration of the vital powers; mastication is retarded; locomotion all but an impossibility, from the tendency of the disease to be confined to the feet in its greatest intensity; the whole course is slow and retarded, rendering recovery in these animals of a very tedious, lengthened, and unsatisfactory nature, in a great measure resulting from the extreme difficulty in distributing the necessary minute attention to individuals comprising such large flocks in various parts of the kingdom, together with peculiar influences excited upon them by locality, and the effects of dirt, moisture, &c., &c., as irritants constantly applied, which perpetuate the existence of sores, and induce ulceration and sloughing. The poor creature moves upon his knees when required, and as disease assumes more and more the chronic form, serious losses result to the proprietor by the impediment thus set up against the practicability of restoring lost condition among such numbers. Suppuration proceeds slowly and obstinately; the feet are hot, and softer structures above raw and exquisitely sore; and at length the hoof is thrown off. If matters do not stop here, bones, tendons, and ligaments are exposed, and sometimes sequestered, and fungoid granulations are pushed forward with a rapidity the most astonishing.

(*To be continued.*)

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

(*Continued from* p. 519.)

Let us leave the class of structural food for a time, and consider the fuel which gives the necessary heat to the body. The temperature of a man is from 98° to 99° Fahrenheit, or

about 40° higher than the air is in this country. The body being therefore continually robbed of heat by a cold atmosphere, must have an internal source of supply. The fuel which burns in the furnace of the body consists mainly of bodies from which the element nitrogen is absent. The order in which they form fuel of the best quality is the following: (1) Fat; (2) Starch; (3) Cane Sugar; (4) Grape and Milk Sugar. Their value varies considerably, for 40 parts of fat will give out as much heat as 97 parts of starch or 100 parts of sugar, or 310 parts of flesh, when that structural food is used for such a wasteful purpose as the supply of heat to the skin. In the ordinary combustion of a fire, the oxygen of the air unites with the carbon and hydrogen of the fuel, forming carbonic acid gas and water. The air taken in by the lungs furnishes oxygen to the blood. About 7 cwt. of this gas are annually inhaled by the lungs of an adult man, and nearly one fifth enters into combustion in the body with the food. Clearly it must pass away again in some form, for the body of a healthy adult is the same in weight at the end as at the beginning of the year. It is easy to calculate how much heat a daily supply of oxygen would afford; for the combustion in the body, though slow, gives out just as much heat as if the food were burned in a fireplace. After making full allowance for the heat expended in evaporating the usual quantity of water by perspiration, there is as much left as would raise 143 lbs. of water from 32°, the freezing point, to 212°, the boiling point. As water requires more heat to raise it through this range than the solids of the body, the amount of heat daily generated by the combustion of food is amply sufficient to keep the body of a man of 150 lbs. in weight at the proper temperature.

As the quantity of coal consumed in a common fireplace changes with the conditions under which the combustion proceeds, so also does the quantity of food vary with the altering conditions of the body. When a fire is stirred combustion is quickened, because oxygen from the air enters more freely among the particles of the fuel and unites with its ingredients. When the body of a man is stirred into activity by any cause, such as by walking, by labour, by speaking, the lungs act more quickly, additional oxygen enters the body, and its internal heat is augmented. The rhythm of the respiration regulates the quantity of air taken into the lungs, and of the oxygen absorbed. About six sevenths of the oxygen absorbed by the blood are used to burn the charcoal or carbon in the food, the other seventh part burning the free hydrogen of the fats or wasting the tissues. An

adult man in this country, whilst at rest, burns in his body rather more than 7 oz. of carbon daily; gentle exercise increases the amount to $8\frac{3}{4}$ oz., and hard labour augments it to $11\frac{3}{4}$ oz.

We may the more readily understand the varying quantities of food demanded to preserve the constant temperature of the body if we suppose, by way of illustration, that the task were assigned to us of keeping up the heat in the cabin of a ship to a uniform temperature of 98°. Our ship may be supposed resting before Calcutta, where we have seen the temperature of a cabin above 90°. In this case, in the discharge of our assigned duty, we would require to burn very little coal to raise the temperature of the cabin an additional number of 8°. The ship sails to England, and arrives in winter when a frost prevails; coal must now be heaped up in the stove to prevent the heat of the cabin from sinking below the prescribed temperature. The ship is next ordered on a whaling expedition to the arctic seas, where, on its arrival, the intense cold compels us to keep up an incessant fire burning with great briskness, if our fixed temperature is to be maintained. The body of a man is a chamber always to be kept at the same heat under the most varying circumstances. Its temperature, when in health, is the same, whether it basks in the sun at Naples or is exposed to the rigour of a winter at Melville Island, in the Polar seas. This constancy of heat is preserved by burning fuel in the body in exact proportion to the demand for it. If clothes are heaped on the body it is more slowly chilled, and requires less fuel, so that our garments economise food, and are an actual substitute for it. During famines it is not unusual to find families lying in bed covered with clothes, so as to diminish the cravings of hunger, the warmth being an equivalent for one kind of food, and the rest diminishing the activity of the lungs, or, in other words, the supply of oxygen to the system. But although this answers as a temporary expedient, the internal fire soon goes out unless fuel be supplied to it. Sir John Franklin, in his travels, writes—"During the whole of our march we experienced that no quantity of clothing would keep us warm while we fasted, but on those occasions on which we were able to go to bed with a full stomach, we passed the night in a comfortable manner." The altered rhythm of respiration and the consequently changing appetite, regulates for us, with more precision than the best adjusted damper in a fireplace, the quantity of fuel required by the body. With that wonderful wisdom which is displayed in all the works of God, we find even the nature of food in different countries suited to the

exigencies of climates. The fruits and rice of hot countries form fuel rich enough for the tropical regions, while the fat and blubber of fish give the requisite highly combustible food to the Eskimos and other arctic inhabitants. The quantity of food shovelled daily into the mouth of one of these people would be incredible unless so frequently attested. Thus Sir J. Parry weighed the food of an Eskimo lad, and found him to consume in one day—

Seahorse flesh, hard frozen	4 lbs. 4 oz.
„ „ boiled	4 „ 0 „
Bread	1 „ 12 „
Rich gravy soup	1¼ pint.
Raw spirits	3 glasses.
Strong grog	1 tumbler.
Water	1 gall. and 1 pint.

Sir John Ross assures us that a full-grown Eskimo will eat daily 20 lbs. of flesh and oil. A Yakut washes down this quantity of flesh with a quart or two of train-oil, and will eat in addition, as a sort of dessert, on great occasions, a dozen tallow candles. Captain Cochrane says, in his pedestrian journey through Siberia, that a good calf, weighing 200 lbs., will serve four or five Yakuts for a single meal; and Admiral Saritcheff assures us that in his travels he knew one Yakut who consumed in twenty-four hours "the hind quarter of a large ox, 20 lbs. of fat, and a proportionate quantity of melted butter for his drink." The admiral sent for this man, to test his powers on a single meal, but unluckily he had just breakfasted; in spite of which, however, he sat down and consumed a second repast of 28 lbs. of thick rice porridge, containing 3 lbs. of butter. Now, although in all these authentic accounts we must remember that savages, whether in hot or cold countries, have great powers of fasting and gormandising alternately, still the chief explanation of the enormous consumption of highly combustible food is the requirements of the rigorous climate. It does not, as compared with our own food in this country, represent a greater difference of fuel than would be required to keep the same apartment heated to 60° or 70° in sunny Palermo or in frozen Spitzbergen.

The winter sleep of hybernating animals further illustrates the source of animal heat. In summer they eat more food than is required for the daily waste of the body, and the excess is stowed away as fat. This accumulates around the caul and loins, and pushes up the diaphragm or separating membrane, so as to lessen the space in which the lungs play. The fat gathers further round the edges of the heart and lungs, and still more contracts the room for the action of both organs

Just as a man after a heavy dinner, which pushes temporarily the diaphragm against the lungs, or a fattened pig after a meal, falls asleep because an insufficiency of air enters the system, so the hybernating animal sinks into a more permanent state of repose. The respiration becomes so sluggish that several minutes sometimes elapse between the respiratory acts. As a consequence of diminished combustion, the temperature of the winter sleeper lessens considerably. A similar fall in the heat of the body, though of course to a much less degree, is experienced by the after-dinner sleeper, who, feeling chilled by the lessened oxidation, draws his chair towards the fire before indulging in repose. The bodies of winter sleepers are like lamps slowly burning, the fat being the oil and the lungs the wick. Gradually, as the fat is burned away, the space for the play of the lungs becomes enlarged; more oxygen now enters the system, and the animal resumes its active habits in satisfying the demands for food. Any fat animal might, under favorable circumstances, live upon its own fat for a considerable time. There is a case recorded in the 'Linnean Transactions' of a pig which was overwhelmed by a landslip and was excavated alive after 160 days, during which time it had lost 120 lbs. in weight. Its fat had been nearly but not completely burned away, otherwise the living lamp would have gone out for want of oil. The fat tails of the Dumba sheep, in the Somali country, described by Captain Speke, diminish in size during an arid season, and compensate the animal for the uncertainties of its pasture.

Having now considered very generally the nature of the structural and of the heat-giving food, we may turn to the mineral matter which exists in animal bodies and in the food fitted for their support. Unfortunately, the knowledge on this subject is far from being precise. Certain mineral bodies, such as phosphate of lime, magnesia, soda, and potash, chloride of sodium or common salt, sulphates of the alkaline bases, and oxide of iron, are absolutely essential to nutrition. The function of some of them is too obvious to escape notice, as in the case of bones, in which phosphate of lime forms the chief part, amounting in weight, in a full-grown adult, to about 15 lb. 12 oz. But with regard to other mineral bodies, their exact mode of action is not so apparent. Thus, common salt is known to be quite essential to nutition. It was formerly a punishment in Holland to feed great criminals on food free from salt, and they are stated to have been subject to the most loathsome diseases. Cattle, on the extensive prairies of America, can be kept from straying by establishing salt-licks in particular places. And yet the whole amount of

salt in the body does not probably exceed 4 oz. Undoubtedly it is essential to the processes of digestion and assimilation, although we cannot explain more than a few of its actions. We know that it aids the absorption of water into the system by the process of diffusion; it supplies the acid which the stomach requires for digestion; it gives soda for the formation of bile and of pancreatic juice, and it helps the solution of albumen. If all the organic elements of nutrition—the flesh-formers and heat-givers—were presented to an animal in abundance, in the absence of these mineral substances, the animal would not only cease to thrive, but all nutrition would be impossible. They enter into every organ as a necessary part of it. Different organs, however, show a selection for particular mineral substances. Thus, the brain loves phosphorus, while the bones affect phosphate of lime; fluor-spar passes chiefly to the teeth, to give hardness to their enamel; silica or flint lodges in the nails and in the hair; phosphates of magnesia and phosphate of potash dwell in the flesh, while phosphate of soda prefers to take up its abode in the blood and cartilages. Our information, however, on the subject is very meagre, and while we recognise the importance of these mineral ingredients of food, chemists do not at present profess to explain their action. Just as the flesh-formers are continually passing away from the system in a partially burned state, so do these mineral substances. They leave the body generally in the same form as they were introduced; but in some cases, as with sulphur and phosphorus, they are removed in the form of products of combustion—sulphuric and phosphoric acids.

Having now taken a general survey of the three classes of ingredients of food—1. The structural food, or "flesh-formers;" 2. The non-nitrogenous food, or "heat-givers;" 3. The mineral food—it is desirable, before examining the value of the various kinds of food, to consider the method in which they are mixed by nature so as to form a complete wholesome nutriment. There is one kind of food in which the mixture is so complete that it may be safely taken as a general type of what all food should be; we allude to the food with which the mother feeds her infant child, viz., milk. The milk of the cow in 100 parts has the following composition—

Water . . .	87·13
Casein . . .	4·00
Butter . . .	3·50
Sugar of Milk . .	4·60
Mineral Substances . .	0·77
	100·00

We see how carefully nature has provided for the growth of the infant. In the casein there is abundance of structural food for the building up of organs; in the highly combustible fat or butter, and in the less carbonaceous sugars, we have a full supply of heat-givers. For the sake of simplicity we have not expressed in the previous analysis the nature of the mineral substances, but it may suffice if we state that in 100 parts of them there are more than 56 parts of bone earth for the building up of the young skeleton, besides common salt, potash salts, iron, silica, and every mineral ingredient that we find in the body. It may be interesting to inquire, with regard to the typical food, what proportion the structural materials have to the respiratory or heat-giving substances. For this purpose we must convert both the butter and sugar into a common value, and calculate them as if they were starch, which is the most common heat-giving body in different kinds of food. Estimated in this way, the quantity of heat-givers is three times greater than that of flesh-formers. But the nutrition of the young animal is, in many respects, different from that of the adult. In the case of the latter it is only necessary to supply the daily waste of the tissues; in the former it is also requisite to furnish materials for the growing body, and also abundant fuel to maintain the higher temperature of the infant. With this difference kept in view, all our efforts in diet appear to aim at imitating the typical food, milk, by adjusting a proper balance between the flesh-formers, heat-givers, and mineral bodies. Thus, with a flesh-forming aliment like beef or mutton, we take a rich heat-giving one like potatoes or rice. To fat bacon, abounding already in heat-givers, we add beans, which compensate for its poverty in flesh-formers. With fowls, poor in fat, we consume ham, rich in this combustible. Our appetites and tastes become the regulators of food, and adjust the relative proportions of its several ingredients; and until the appetite becomes depraved by indulgence or disease, it is a safe guide in the selection of aliments.

(*To be continued.*)

ORDER IN COUNCIL.

At the Court at Windsor, the 11th day of June, 1866. Present: the Queen's most excellent Majesty in Council.

Whereas by an Act passed in the present session of Parliament, intituled "An Act to amend the law relating to contagious or infectious diseases in cattle and other animals," it is, amongst other things, enacted, that it shall be lawful for Her Majesty, by Order in Council, from time to time, to continue, or to renew, if expired, all or any of the provisions, in the first part of that Act contained, for such time as shall be specified in such Order.

And whereas it is provided in the eleventh section of the said Act, which section is in the first part thereof, that Part I of the said Act shall continue in force until the fifteenth day of April, one thousand eight hundred and sixty-six, and no longer, unless continued or renewed by Order of Her Majesty in Council.

And whereas it is provided in the twelfth, thirteenth, fourteenth, fifteenth, and sixteenth sections of the first part of the said Act as follows:

Slaughter of Diseased Animals.

"12. Every Local Authority shall cause all animals affected with the cattle plague within its district to be slaughtered, and shall, by way of compensation for every animal so slaughtered, pay to the owner thereof such sum not exceeding twenty pounds, and not exceeding one half of the value of the animal immediately before it was affected with the cattle plague, as to such Local Authority may seem fit.

"13. Every Local Authority shall cause every animal that has died of cattle plague, or has been slaughtered in consequence of being affected with cattle plague within its district, to be buried as soon as possible in its skin in some proper place, and to be covered with a sufficient quantity of quicklime or other disinfectant, and with not less than six feet of earth.

"14. Every Local Authority shall, within its district, cause the yard, shed, stable, field, or other premises in which any animal affected with cattle plague has been kept while affected by the disease, or has died or been slaughtered, to be thoroughly cleansed and disinfected, and all hay, straw, litter, dung, or other articles that have been used in or about any such animal to be burnt or otherwise destroyed; and no fresh animal shall be admitted into any yard, shed, stable, field, or other premises in which any animal affected with cattle plague has been kept while affected by the disease, or has died or been slaughtered, until the expiration of thirty days after the cleansing

and disinfecting of such premises in pursuance of this Act; and every Local Authority shall direct the disinfecting the clothes of, and the use of due precautions by Inspectors, Cattle Overseers, and others in contact with animals affected by the cattle plague, with a view to prevent the spreading of contagion.

"15. A Local Authority may, if it thinks fit, cause to be slaughtered any animal that has been in the same shed or stable, or in the same herd or flock, or in contact with any animal affected with cattle plague within its district; and the owner of any animal so slaughtered may either dispose of the carcase on his own account, with a license from some officer appointed in that behalf by a Local Authority, or may require the Local Authority to dispose of the same, in which case such Local Authority shall pay to the owner thereof, by way of compensation, such sum, not exceeding twenty-five pounds, as may equal three fourths of the value of the animal slaughtered: Provided always, that the Lords of Her Majesty's Most Honorable Privy Council, or any two or more of them, may reserve animals (ordered to be slaughtered as aforesaid) for the purpose of experimental treatment.

"16. The Local Authority may require the value of any animal slaughtered under this Act, to be ascertained by Officers of the Local Authority or by arbitration, and generally may impose conditions as to evidence of the slaughter and value of the animals slaughtered: Provided that no compensation shall in any case be paid in respect of any animal found affected with cattle plague in a market or on a highway, or in respect of any animal which has been moved or otherwise dealt with in contravention of this Act, or any Order of a Local Authority made in pursuance thereof."

And whereas by Orders of Her Majesty in Council, the last bearing date the ninth day of May one thousand eight hundred and sixty-six, the provisions of the above-recited sections of the first part of the said Act were continued in force beyond the said fifteenth day of April one thousand eight hundred and sixty-six, until the thirtieth day of June one thousand eight hundred and sixty-six; and whereas it is considered expedient that the same be further continued:

Now, therfore, Her Majesty, in exercise of the power vested in Her by the said Act, and by and with the advice of Her Privy Council, is pleased to order, and it is hereby ordered, that the said recited provisions contained in the twelfth, thirteenth, fourteenth, fifteenth, and sixteenth sections of the first part of the said Act shall continue in force on and after the said tenth day of May one thousand eight hundred and sixty-six, until the first day of August one thousand eight hundred and sixty-six.

(Signed) ARTHUR HELPS.

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

OBSERVATIONS ON A MALADY IN SHEEP AND GOATS ANALOGOUS TO THE RINDERPEST, CAUSED THROUGH INFECTION FROM ANIMALS OF THE BOVINE SPECIES AFFECTED WITH THIS PEST.

By Professor Röll, of the Veterinary Institute, Vienna.

(*Continued from* p. 525.)

The section of two sheep which had died, and two which were killed in an advanced stage of the disease, was described as follows. The bodies were greatly emaciated, the parts surrounding the nose encrusted with viscid mucus, the hind quarters and tail besmeared with excrements, the muscles dark-coloured, the heart and blood-vessels contained dark fluid blood, on the mucous membrane of the mouth there were erosions, that of the windpipe and the large bronchial tubes red and swollen, particularly in the parts corresponding to the interstices of the cartilages; the lungs were not examined, which was the more to be regretted, as there is a doubt whether those alterations which had been observed in other cases of the malady were present in these also, and to which the difficulties in the respiration which had been remarked led to suppose.

The abomasum and the small intestines were of a dark-brownish colour on the outside of the mucous membrane, particularly in the folds of the fourth stomach, and the duodenum was small, very red, and infiltrated. In places it was coated with exudations and extravasated blood, in others striated with regular extravasations; excoriations were also found in some spots. These intestines were filled with a dirty, dark-coloured, fluid mass, the mucous membrane of the large intestines was similarly altered, that is, like that of the small intestines; the first and second stomachs were normal, in no case was the dry, cake-like ingesta found in the third stomach; the liver was pale and softened, the gall-bladder mostly distended and filled with thin bile; the mucous membrane, like that of the urinary bladder, red and easily detached; the spleen was normal.

In reference to the infecting and spreading of the rinderpest amongst sheep this was clearly proved, inasmuch as a similar malady occurred nowhere in the district of Lemzyner where the rinderpest did not prevail at the time, and that, on the contrary, everywhere where the latter raged and the sheep had been in contact with infected horned cattle the sheep-pest also broke out.

To remove all doubts on this point, we give the following instances. In the village of Jeziorki some rinderpest-infected beasts were put in a sheep-stable with some sheep, among which was also a goat. The goat became first affected, and afterwards the sheep, all of them showing the above-described symptoms; and notwithstanding the separation which on that account was immediately had recourse to, and the treatment adopted, as well as the disinfecting with chlorinated lime and diluted sulphuric acid, &c., out of 1143, 1129 were attacked, from which, in the course of four weeks, 493 with the above-named goat, died. The mortality was greatest in the first two weeks.

In the village of Rakowezachy, which is inhabited by small landowners, shortly after the outbreak of the rinderpest five sheep, which had been kept in the same shed with a cow affected with the rinderpest, became also affected, and in proportion as the rinderpest spread in the village more sheep were affected, so that in the course of a fortnight 200 fell a sacrifice.

Three sheep belonging to the colony of the village of Ralinowa came in contact with some cattle affected with the rinderpest, in the village of Rakow; they were brought back to the colony before the malady broke out among the sheep at Rakow, and put in the same place with two other sheep and five beasts; shortly after, one of the sheep that had been brought back became sick, and died on the seventh day after their return. The malady spread to the four other sheep, and also to the five beasts; of the former, two recovered, the remainder, with the five beasts, died within fourteen days from the time that the first sheep was attacked.

From the colony the sheep-pest spread to the village of Kalinowa, distant one and a half wersts, in consequence of the four remaining sheep having been driven to that place for the purpose of being put in a flock. Shortly after this, the malady broke out in this flock, through which the cattle also became infected with rinderpest.

In the colony of Zawady, which is considered a suburb of the town of Louize, some sheep belonging to a convent were sent to the former place, where they were left for one night

amongst the sheep of Zawady. The rinderpest raged at that time in Louize, and shortly after the malady broke out amongst the sheep at Zawady, and the rinderpest soon followed. From the abrasions on the tabular return of the malady, it will be seen that the sheep of Louize, which had not been in contact with those of the convent, remained free from the disease.

A similar observation was made in the village of Szumona, where the sheep belonging to the rector being kept separate never became affected, although the whole of the sheep in the place were affected; which clearly shows that the malady had not an epizootic character.

According to the tabular account of the malady in the district of Louizguer, in nineteen rinderpest-infected villages, metaries, and farms, having a status of 9691 sheep, 4988 were affected with the sheep-pest, consequently 74 per cent., of which 1039 recovered, 3949, or 79 per cent., died. Amongst the goats 10 deaths were recorded. At the summing up of the Government Commission from the Medical Collegium for the kingdom of Poland, at its last meeting in July, 1863, came to the following decisions:

1st. To enlighten the inhabitants of the kingdom on the transmission of the rinderpest to sheep and goats.

2nd. To enact, that in all places where the rinderpest prevails sheep and goats must be isolated from infected cattle and places, and that in cases of an outbreak of the disease amongst the sheep they should be parcelled off, and kept in large airy sheds, or in the open air.

3rd. To acquaint forthwith the civil or medical authorities with the outbreak, and any observation which might have been made on it.

4th. The decision of the question whether, in order to the speedy suppression of the contagion, the same system of killing the affected and the suspected should be adopted, to be for the time suspended.

While these facts were under print, others were received from other countries, where similar observations had been made and published, viz., from Austria by Maresch, Jesseu, Bleiweis; and similar observations have also come in from other parts of the kingdom, from which it appeared that besides the district of Louizguer, in other places this malady also prevailed during the time the rinderpest devastated them, the characteristics of which were similar to the rinderpest.

These districts were—

1. Stanislawower,	with	2	infected places	and	126 deaths.
2. Lubliuer	„	2	„	180	„
3. Lukower	„	1	„	93	„
4. Pultuskische	„	1	„	260	„
5. Astroleukaer	„	3	„	1200	„
6. Siedlitzer	„	1	„		
7. Heubiszower	„	1	„		

In some of these places the malady had not ceased at the time, and the number of deaths were not given.

Experience obtained by inoculation, or otherwise, by direct infection—

1. *In Bohemia.*

At the close of 1860, when the sheep-pest was nearly extinguished at Chlumetz, Dr. Maresch tried to produce the infection by shutting up two calves and one goat with three sheep affected with this malady; the sheep had been previously shorn of their wool, had been put in a bath of ley, and well washed, in order to prevent any infectious matter being attached to the wool or other parts of the body. Notwithstanding that they were left together fourteen days, during which time two of the sheep died, nothing was observed in the animals, subjects of the experiments, except a slight emaciation in the goat, and, at times, coughing of the two calves.

At the end of this time, the subjects of the experiment being killed, the section of the calves showed the appearances of circumscribed pneumonia, and in one, traces of intestinal catarrh in the mucous membrane of the duodenum; every part in the goat was normal.

2. *In Carniola.*

Although the experience obtained in Carniola sufficiently established the analogy of the malady which affected the sheep and goats with the rinderpest, and the successibility of the transmission of the same from the bovine species to the ovine, and *vice versâ*, it was still deemed necessary to make the experiment of direct transmission of the malady by inoculation and direct contact, so as to obtain direct proofs, so as to meet any objections; such as that the contagion was contained in the wool of the sheep, &c. It was therefore desirable that healthy animals of the bovine species

should be inoculated with the blood of the secretion of the affected sheep.

A proposition made by me in that view was sanctioned by the imperial royal state ministration, the necessary expenses were defrayed by the government department; veterinary surgeon Professor Bleiweis was nominated to make the experiments.

These experiments were made at Paeluka, in the Cernembler district, with the assistance of Dr. Maly, and in Sagorje, Jeistritzer district, in the presence of the district surgeon, Kulling.

In Preloka, where there had not been any rinderpest since the 30th of May, the sheep-pest also drew to its end, and on the 8th of July, 1863, the day on which the inoculations were undertaken, there was but the dead body of one sheep, which had died the day before, and had already been buried. The malady had had an unusual course of eight days in this animal, and death seemed to have been caused rather from the debility produced by the malady.

Post-mortem examination showed intense nasal catarrh, swelling of the mucous membrane, of abomasum, and accumulation of pus in this viscera, also in the duodenum hyperæmia of the liver, catarrh of the air-tubes, and hepatization of the lungs.

For the purpose of inoculation, four beasts, perfectly healthy, were bought at a place about three English miles off. They were put in a building at a farm, the building had been empty for three months, and were completely separated from one another. The inoculations were made with the blood, the discharge from the nose, the secretion of the windpipe, and the contents of the stomach and intestines, and then with the fluid contained in the lungs, &c. The inoculations were performed in the following manner, viz., a worsted thread dipped in the virus, and inserted under the skin of the shoulder, with an inoculating needle; in the mucous membrane of the under lip; finally, by rubbing the mucous membrane of the nose with the virus of the different secretions; all the four animals were inoculated in the same manner, so as to make sure of success with virus obtained from a subject which had been dead and cold for some time. Of the four inoculated beasts, two remained perfectly healthy during the time of the experiments. No 1 was a heifer, one and a half years old, the other, No. 3, a cow, three and a half years old; No. 2, also a heifer, one and a half years old, on the fourth day after the inoculation, seemed somewhat weaker, was less lively, and the appetite was not so good;

these symptoms lasted the whole of the next day, after which they disappeared. No. 4, a two-year old ox, on the fourth day after the inoculation, had also less appetite, and thirst, and the rumination suspended, accompanied with weakness and slight weeping from the left eye, mucous discharge from the nose, the fæces softer and gruel like in a few cases; these symptoms continued the following day, but diminished on the sixth, and totally disappeared on the eighth day after the inoculation. On the evening of the ninth and on the tenth day, however, the appetite again diminished, the rumination was interrupted, the fæces soft; the animal was mostly lying down, it was dull and weak, did not drink for twenty-eight hours; the secretions of the mucous membrane were increased; the respiration and pulse were normal; eleventh, twelfth, and thirteenth, there was no change, with this exception, that the animal drank again, and the fæces were of a greater consistence; on the fourteenth the appetite returned, rumination was again performed as usual, and the animal became lively. On the fifteenth it was killed, for the purpose of investigation and to complete the experiment. The section gave the following results: great emaciation of the body; hyperæmia of the mucous membrane of the nose; slight redness in circumscribed spots on the mucous membrane of the windpipe and larynx, but there was no alteration in its texture; there was no alteration in the mucous membrane of the three first stomachs; the contents of the third stomach were like a hard cake; the mucous membrane of the fourth stomach was of a dark-red colour, particularly towards the pylorus and its borders, that of the duodenum swollen and covered with small erosions, that of the remainder of the small intestines was reddened in striæ, and coated with a pus-like yellow mucus; the large intestines healthy; the liver dark-coloured and softened; the gall-bladder distended with thin bile; spleen and kidneys healthy.

The symptoms which appeared in No. 4, four days after the inoculation, from the results of the post-mortem examination, must be considered as the effect of that inoculation, and in all probability those symptoms of No. 2 must be taken in the same light. Possibly the circumstance that at the time of the experiments in Preloka the sheep-pest was greatly on the decrease, and that the sheep from which the virus was taken had rather died from exhaustion, after the malady had run its course, and might be the cause of the mild form in No. 2, and the failure in the remaining two. The supposition that the virus of the rinderpest by having passed through the sheep, and the malady in them been benign,

has consequently lost some of its virulence, and by being again transferred to the ox is of a milder form, deduced from the results in Sagorje, and later from those at the Veterinary Institute of Vienna, obtained by repeated inoculations and other experiments, proved on the contrary that the infection from sheep and goats in the usual way is quite as virulent as that from ox to ox.

The three experiments were, from Preloka (there being no more virus obtainable), transferred to Sagorje, where the sheep-pest prevailed with great violence. On the 21st of July, 1863, in the afternoon, three beasts were inoculated; an ox, three and a half years old (No. 1); a worsted thread soaked in blood was inserted under the skin at the back of the shoulder; excretions from the bowels were rubbed on the mucous membrane of the nose, and also inoculated in the mucous membrane of the lower lip; the whole of the virus was taken from a sheep which had died six hours before, but not cold yet, the section of which shows clearly that the symptoms had already established, beyond a doubt, the nature of the malady. Besides the ordinary appearances there was a remarkably distended gall-bladder filled with thin bile.

No. 2, a heifer one and a half years old, was inoculated with worsted thread soaked in the discharge from the nose, which was inserted behind the shoulders, with the secretions of the mucous membrane of the intestines; it was inoculated in the under lip, and also rubbed with the same on the mucous membrane of the nose; the virus had been taken from a sheep which had been three days sick. From the same sheep, after it had been killed, a cow, twelve years old (No. 3), was also inoculated as follows: a worsted thread, being soaked in the abundantly filled gall-bladder, was inserted behind the shoulder, excretions from the bowels were also inserted in the under lip, and rubbed on the mucous membrane of the nose.

On the 30th of July, nine days after the inoculation, No. 3 left off feeding and ruminating; the coat was staring; there was increased temperature at the ears, horns, and mouth; then diarrhœa was observed (the appearance of the last symptom led me to suppose that the malady had begun one or two days before, and that the first symptoms had been overlooked). On the following day, erosions were found on the mucous membrane of the mouth; there was an abundant secretion of tears from the eyes, and a mucous discharge from the nose; grinding of the teeth, continuation of the diarrhœa; to these symptoms were added, on the following

day, difficulty of breathing, and at times a jerking cough, sensibility over the dorsal region on pressure being applied; under the aggravation of these symptoms the animal died on the 3rd of August, thirteen days after the inoculation and five after the appearance of the first symptoms.

The section showed the following morbid lesions: great emaciation; abdomen distended with gas; the corners of the eyes charged with mucus, the nose besmeared with the puro-mucous discharge; the hind quarters dirtied with fæcal matter; the mucous membrane of the larynx and the trachea reddened; the left lung hepatized in the lower half; the heart softened, the cavities filled with dark coagulated blood; red spots and erosions on the gums; the two first stomachs were without alteration, and in the third there was a large quantity of dry ingesta; the epithelium was easily detached; the mucous membrane of the fourth stomach was of a dark-red colour, particularly towards the pylorus, and covered with exudations; it contained a dirty grayish fluid; the small intestines were similarly affected; the glands of Peyer prominent; the large intestines were slightly hyperæmic, and in spots, covered with exudations; the mesenteric glands were enlarged, the spleen softened, the liver likewise and of a tawny colour; the gall-bladder strongly distended with green bile; the kidneys were the colour of blood.

The symptoms and the results of the section left no doubt that this experimental animal had been suffering from the true rinderpest, the cause of which was the inoculation with the virus taken from a pestiferous sheep nine days previous.

The inoculated animals, Nos. 1 and 2, remained healthy up to the 8th and 9th of August; on these days they became affected with the symptoms of the rinderpest, which on the following day rapidly increased, so that on the 12th it was deemed prudent to have them killed, to prevent the spreading of the contagion among the cattle of Zugarje.

The section showed the appearance of decided rinderpest; in the report stress was laid on the peculiar hardness of the food in the third stomach.

The fact that from the day of the inoculation (21st of July) to the time of the outbreak of the malady (8th of August) there is a period of eighteen to nineteen days, which is much beyond the known period of the incubation of the rinderpest. But it is not at all unlikely, considering that these animals were under the same roof, that they caught the infection from the experimental cow, No. 3, in the natural way

From the experiments in Zugarje it results that the contagion of the sheep-pest may be transferred to the bovine

species, in which it produces the rinderpest, but that it produces by no means a milder form of this malady; consequently, the passage through the sheep does in no way mitigate the disease.

A. *At the Veterinary Institute of Vienna.*

Experiment 1.—Partly to verify the results obtained in Carniola, and to strengthen them by a greater number of experiments; and partly to establish the analogy of the two diseases, which is still doubted on many sides; and, finally, to make the students acquainted with the true forms of the malady,—some inoculations were instituted in the months of November and December, 1863. The virus was obtained from the infected village Gross-Engersdorf, in Nether Austria.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, HELD JUNE 1ST, 1866.

PRESENT:—Professor Varnell; Messrs. Broad, Field, Gowing, Harrison, Moon, Thacker, Wilkinson, and the Secretary.

On the motion of *Mr. Wilkinson*, seconded by *Mr. Gowing*—

Mr. J. C. Broad, Vice-President, took the chair.

The minutes of the preceding meeting were read.

On the motion from the Chair that the minutes be signed, *Mr. Wilkinson* pointed out that at the last meeting of the Council a discussion took place upon the question of the future powers of the Parliamentary Committee, which resulted in an instruction having been given to the effect that if any further proposition be made by the Government with reference to changing the title Veterinary Surgeon, it should not be at the discretion of the Parliamentary Committee to assent on the part of the Council; and with reference to the power which the College seeks to deal summarily with those who unlawfully use the title of Veterinary Surgeon, that the Parliamentary Committee should use its best endeavours to secure that part of the Bill being carried in the Committee of the House of Commons.

Mr. Wilkinson considered this to be a necessary link in the history of the proceedings of the Council on this subject, and moved that an addition to that effect be made to the minutes just read.

The motion was seconded by *Mr. Field.*

A discussion arose, during which some doubt was expressed as to what really occurred at the last meeting of Council. Mr. Wilkinson, thinking it of importance that the minutes should contain some allusion to the subject, suggested that it would be very desirable to reserve the decision on the question for a fuller meeting of the Council.

It was thereupon moved by *Mr. Wilkinson,* and seconded by *Mr. Gowing*—

"That the signing of the minutes be deferred to another meeting, when the President and some members of Council who took an active part in the discussion might be present."

A discussion ensued, the general bearing of which tended to the opinion that unless the minutes of the preceding meeting were signed, the business of this meeting could not be entered upon.

It was then moved by *Professor Varnell,* and seconded by *Mr. Moon*—

"That the minutes be signed."—Carried.

The Secretary then proceeded to read the correspondence which he had received from the Right Hon. H. A. Bruce, M.P., and also E. Holland, Esq., M.P., who had appointed a time when it would be convenient for a deputation to be received.

The Report of the Parliamentary Committee on the result of the interview with the Right Hon. H. A. Bruce, M.P., on Monday, 28th of May, 1866, was then read.

REPORT OF THE PARLIAMENTARY COMMITTEE ON THE RESULT OF THE INTERVIEW WITH THE RIGHT HONORABLE H. A. BRUCE, M.P.

Edward Holland, Esq., M.P., and C. N. Newdegate, Esq., M.P., kindly introduced a deputation of the Royal College to Mr. Bruce on Monday, 28th May.

The deputation consisted of the President, John Lawson, Esq., of Manchester; Professors Simonds, Varnell, and Gamgee; Edwin Harrison, Esq.; and Mr. W. H. Coates, Secretary.

Mr. Holland, in introducing the deputation, stated that the object of the Bill was to raise the status of the veterinary profession by giving effect to the provisions of the Charter of Incorporation granted to the Royal College of Veterinary Surgeons in 1844. He drew attention to the clause of the Charter at page 5, in which the name and title of "Veterinary Surgeon" was to be held solely and exclusively by members of the Royal College.

Mr. Bruce construed the paragraph referred to by Mr. Holland as implying that members of the Royal College were solely and exclusively members of the veterinary profession, but he did not consider that the provisions made precluded non-members of the profession from calling themselves Veterinary Surgeons.

Mr. Newdegate, M.P., said that in conjunction with the Speaker he had for many years taken a deep interest in the Royal Veterinary College; and although at the time of the obtainment of the Charter circumstances prevented that the wishes of the Royal Veterinary College should be fully carried out, nevertheless they had felt that the Charter incorporating the profession should be acted up to. They had willingly resigned the privilege of granting diplomas to practise, restricting their duty to the granting certificates whereby students were entitled to be examined by the independent Board of the Royal College of Veterinary Surgeons. It had been found necessary to extend at an early period the curriculum of education, and now the students studied for two full sessions instead of the shorter period previously prescribed, and power was vested in the professors to grant or refuse the certificates for the examination even at the end of the two sessions of any student's attendance.

Mr. Bruce asked if the examination instituted by the Royal College of Veterinary Surgeons was one calculated to test the merits of highly educated or of inferior men.

Mr. Newdegate considered that the examinations were such as to suit the men of average attainments.

The President (Mr. John Lawson) drew Mr. Bruce's attention to the fact that the Royal College of Veterinary Surgeons was a body totally distinct and independent of the teaching colleges, and belonged to no portion of the three kingdoms, but was essentially a national institution, governed by members of the profession from all parts of Great Britain and Ireland, and it appointed boards of examiners wherever the qualifications of students for the diploma of the Royal College had to be tested; that hitherto annual sittings of the Examiners of the Royal College had been held in London and Edinburgh.

Mr. Bruce asked how the Irish students were dealt with.

Mr. Lawson explained that there was no special College in Ireland, but that if one were instituted the Royal College would doubtless appoint a board to examine students there.

Mr. Bruce asked what were the number of qualified practitioners in Ireland, and also in Scotland.

Professor Gamgee explained that the number in Ireland

was extremely small, amounting to not more than thirty-five; that even in Scotland the duly-qualified Veterinarians did not amount to 200; and that although a separate certificate had been granted under the auspices of the Highland Society by the Edinburgh Veterinary College, the number of persons practising at any one time with that certificate alone had not much, if they had ever, exceeded 200 over the whole of the three kingdoms.

The Scotch members of the profession were principally members of the Royal College; and though it was stated that 817 persons had been educated in Edinburgh since the foundation of the College there in 1823, no less than 585 of these had obtained the legal diploma of the Royal College. Attention was also drawn to the total number of persons who had received the Royal College diploma, and to the number practising under the assumed name of Veterinary Surgeon.

Professor Simonds afforded some additional information as to the origin of the Royal Veterinary College, and pointed out the advantages which would result from the Bill becoming law.

After some general conversation, in which several members of the deputation took part,

Mr. Bruce asked Mr. Holland to postpone the bringing the Bill before the Committee from Wednesday, 30th, to Wednesday, the 6th of June, and assured the deputation that he would take the whole subject under his most careful consideration.

The deputation has reason to believe that Mr. Bruce is deeply impressed with the importance of having examining boards which act independently of the teaching colleges, and he seemed to deprecate the idea of granting to any individual educational establishment the power of conferring degrees.

Mr. Bruce did not appear in any way to offer opposition to the proposed measure, but rather sought information regarding the status of the Royal College of Veterinary Surgeons, and the effect of the measure on the profession generally.

It was moved by *Mr. Field,* and seconded by *Mr. Moon*—

"That the Report and the letters now read be entered on the minutes."—Carried.

It was moved by *Mr. Wilkinson,* and seconded by *Professor Varnell*—

"That the Parliamentary Committee has no power to alter or deviate from the Bill in its present form without the instructions of the Council."—Carried.

It was then moved by *Mr. Harrison,* and seconded by *Mr. Field*—

"That a Reporter be employed to attend all meetings of the Royal College of Veterinary Surgeons."—Carried.

The Secretary informed the Council that upon the adjoining house being pulled down the stack of chimneys belonging to the College was found to be so defective, and in such a state of dilapidation, that it was highly dangerous to the lives of the inmates.

A letter from the Surveyor of the estate was read, condemning the chimneys, and recommending that immediate attention be paid by having them repaired by a proper builder. The urgency of the case had compelled the Secretary to call together the House Committee, to receive their instructions.

It was moved by *Mr. Wilkinson*, and seconded by *Professor Varnell*—

"That the House Committee be empowered to carry out the necessary repairs of the chimneys, and to call in the aid of a solicitor, if required, with reference to the alterations going on in the adjoining house."—Carried.

The Secretary was instructed to write to the Surveyor appointed to watch over the estate, and ascertain whether he had given notice to the builder employed in pulling down the adjoining house, that he does not undermine or in any way injure or damage the College property.

By order of the Council,
W. H. COATES,
Secretary.

SPECIAL MEETING OF THE COUNCIL, HELD JUNE 11TH, 1866.

PRESENT:—The President; Professors Spooner, Varnell, and Gamgee; Messrs. Broad, Field, Goodwin, Gowing, Greaves, Harpley, Harrison, Hunt, Mavor, Moon, Silvester, Thacker, Wilkinson, Withers, and the Secretary.

The President in the chair.

The minutes of the preceding meeting were read.

After a lengthy discussion,

It was moved by *Mr. Wilkinson*, and seconded by *Professor Spooner*—

"That the last paragraph in the minutes be expunged."—Carried.

The minutes as altered were then agreed to.

A telegram from Dr. Struthers, and other communications,

including a letter from Professor Strangeways, were then read.

Letters were also read from Professor M'Call and Mr. Finlay Dun, which had been addressed to the President on the subject of a proposed Charter for Scotland, a copy of which was laid before the Council.

The Secretary then read an anonymous paper, which he was informed had been freely circulated amongst the members of Parliament, entitled "Reasons why the Veterinary Surgeons' Bill should not pass."

The Parliamentary Committee reported that they had framed a series of replies to the objections against the Bill which would then be submitted to the Council.

The replies having been considered seriatim and agreed to, it was unanimously resolved—

"That the authority of the Council be granted for the purpose of at once issuing printed copies of the objections and answers to be circulated amongst the Members of Parliament.

The following are the objections alluded to and the replies thereto:

VETERINARY SURGEONS' BILL.

Relative Position of the Royal College of Veterinary Surgeons and of the Teaching Colleges of London, Edinburgh, and Glasgow.

The Royal College of Veterinary Surgeons is the only Chartered Veterinary Body in this country with which the Teaching Colleges have been incorporated by common petition and consent. Thus, the Royal College of Veterinary Surgeons is comprised of duly qualified Veterinary practitioners, educated in the Royal Veterinary College of London, or the Veterinary College of Edinburgh, or the Albert Veterinary College, or the Glasgow Veterinary College, and is a National Institution. Scotland, therefore, has a Charter as much as England. Professor DICK was one of the petitioners for the Royal Charter in 1844, and one of the persons to whom it was granted.

Reasons why the Veterinary Surgeons' Bill should not pass, and why a Charter should be granted for the creation of a Veterinary College for Scotland.	*Replies.*
1. If the "Veterinary Surgeons' Bill" be permitted to pass, a great injustice will be inflicted upon the Students of the Edinburgh Veterinary College.	1. The Students of the Edinburgh Veterinary College will be benefited in the same manner and to the same extent as the Students of every other recognised school. The Teaching Colleges, in the event of the Veterinary Surgeons' Bill passing into law, will remain on a perfectly equal footing, in so far as the rights conferred by Charter on the Profession are concerned.

2. The Bill now read a second time in the House of Commons proposes to compel all Veterinary Students of the Edinburgh Veterinary College to obtain the Diploma of the Royal College of Veterinary Surgeons, the plain intention of which is to monopolise the power to grant Diplomas, to shut up the Edinburgh School, and to entail a heavy burden on Scotchmen entering on the study of Veterinary Science, by compelling them to resort to London.

2. The Students of the Edinburgh Veterinary College who have chosen to become duly qualified Veterinary Surgeons have acted in the same way as the Students of other Scotch and English Schools, and have obtained the Diploma of the Royal College of Veterinary Surgeons. They have the privilege of examination by the Scotch section of the Board of Examiners of the Royal College of Veterinary Surgeons in Edinburgh, and incur no more expense and trouble than the Students of other Colleges in London or elsewhere. The Students of the Edinburgh Veterinary College have considered it so great a drawback to the Profession that circumstances should have militated against a proper understanding between the Edinburgh College and the Royal College of Veterinary Surgeons, that they recently memorialised the late Professor Dick n terms indicated in the Appendix.*

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* *To William Dick, Esq., Principal of the Edinburgh Veterinary College.*

The Memorial of the undersigned Graduates of that College.

Your Memorialists have long deplored that want of union, cordiality, and good feeling in the Veterinary Profession, which ought to exist among all bodies of men following the same scientific pursuits.

That in the opinion of your Memorialists this state of things arises from causes which may be materially smoothed down, if not altogether removed, viz., petty jealousies and rivalries between the different Educational Institutions, and Graduates holding Diplomas from the Chartered Royal College assuming a superiority over Veterinary Surgeons who have not that Diploma.

That your Memorialists, actuated by no personal or selfish motives, but by a pure desire for the elevation and advancement of their common Profession, are desirous and think the time has now arrived when something should be done to improve their position, and, if possible, remove the cause of disunion alluded to.

That your Memorialists, whilst thoroughly sympathising with your views and motives in rejecting the Examining Board appointed for your Institution by the Royal College of Veterinary Surgeons, rejoice to believe that a better spirit begins to pervade the members of its Council, and have little doubt that they would now be disposed to treat the Edinburgh Veterinary College with that fairness which its long standing and usefulness, the respectability of its Venerable Head, and its large body of members scattered over all parts of the United Kingdom, so justly entitle it to.

That your Memorialists are of opinion that the adoption, at the Edinburgh Veterinary College, of a Board of Examiners appointed by the Chartered College would materially forward the object they have in view.

That a large number of your Memorialists are already legally entitled to the distinction of M.R.C.V.S., and cannot be charged with selfish motives in wishing that it should be open to *all*. However lightly some may value this title, it is one which all Graduates ought to have an opportunity of possessing without the trouble and expense of a separate examination, and we know that the want of it has obliged many of us in our everyday connection with the public, and our fellow-practitioners who hold that Diploma, to overcome much prejudice and often ill-feeling, not only against ourselves, but the College at which we are

3. For many years past the Highland and Agricultural Society of Scotland has conferred a Diploma of qualification to practise the Veterinary art upon those Students who, after the prescribed course of study, duly passed an examination conducted by a Board of Examiners appointed by the Society. The Members of this Board of Examiners have been amongst the most eminent and talented Medical men and Veterinary Surgeons of Great Britain.

3. Professor Dick organized a private Board, which met annually in the Edinburgh Veterinary College, Clyde Street, in opposition to the Scotch Section of the Board of Examiners of the Royal College of Veterinary Surgeons. The Highland and Agricultural Society countenanced this Board, but never appointed nor paid any distinct body of Medical and Veterinary Examiners. An Examination Fee was charged to each Student by Professor Dick, and retained by him, so that the late Professor had a direct pecuniary interest in opposition to the rights and privileges of the Royal College of Veterinary Surgeons.

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educated. We have also had to rebut and live down many insinuations as to our being unqualified men.

Your Memorialists therefore entreat that it may please you to enter into negotiations at once with the Council of the Royal College of Veterinary Surgeons, for the re-arranging by them of the Examining Board of the Edinburgh Veterinary College, and at the same time make such honorable arrangements as will enable those of us who hold the Diploma of the Edinburgh College only to obtain the Chartered one at as little inconvenience and expense as may be possible, being convinced your doing so would hasten the happy results they have all so much at heart, and put an end to the invidious distinction which the want of the Chartered Diploma raises.

Lastly, your Memorialists are anxious you should take this step from a sincere desire for the well-being, prosperity, and permanence of the Institution with which your name has been associated, with so much credit and justly earned fame, from its birth to the present time. Looking to you as the Father and Founder of Scientific Veterinary Medicine in Scotland, and the College in Clyde Street as their own Alma Mater, your Memorialists will not be doubted when they say that their prayers are for the best interest of both Founder and Institution.

William Williams, Bradford.
John Lawson, Manchester.
Richard Lord, Halifax.
George Morgan, Liverpool.
John Midgley, Birkenhead.
Robert Chambers, Liverpool.
William Chambers, Liverpool.
Cuthbert Simpson, Manchester.
William Haycock, Manchester.
James Haslam, Salford, Manchester.
Thos. Taylor, Manchester.
William Dixon, Manchester.
Thomas Lambert, Manchester.
Edward Gladwin, Manchester.
John H. Burbage, Military Depôt, Canterbury.
John Schofield, Pontefract.
John Kay, Pontefract.
David Paley, Military Train, Curragh.
William Taylor, Methley.
Andrew J. Brown, South Handley.
John Darcey Peech, Wentworth.
Chas. Barker, Malton.
Wm. Stephenson, Pickering.
Frederick John Day, York.
William Hick, Fulford, York.
John Bowman, Elvington, York.
Geo. Screven, Wetherby.
Jno. Edwards, Caerwys, North Wales.
Robt. Roberts, Corwen, North Wales.
Thos. Kennedy, Wrexham, North Wales.
Walter Lewis, Crewe.
Thomas Pratt, Masham.
Alex. Carmichael, Ripon.
James Wilson (Calcutta), per J. Lawson.
John Henry Lee, Macclesfield.
John Wilson, Military Train, China.
William Whittle, Worsley.
Alex. Lawson, Bolton-le-Moors.
Roger Bridge, Bury, Lancashire.
John Aked, Blackburn, Lancashire.
Finlay Dun, Weston, Warwickshire.

4. Students, after receiving the Highland and Agricultural Society's Diploma, for which the Fee of Two Guineas is charged, are eligible, as Veterinary Surgeons, for all Government Veterinary appointments, including Commissions as Veterinary Surgeons in Her Majesty's Army; and the Veterinary Surgeons possessing this Diploma have, from their superior education as Practical Veterinary Surgeons, caused the public to acknowledge a preference for them, on account of their Practical acquirements. The Diploma in times past has been recognised by Her Majesty's Government, the East India Company, and by all in authority throughout the Colonies.

4. In reply to the annexed paragraph, the best refutation is afforded by a statement of the relative number of gentlemen holding Her Majesty's Commission in the Army, who are Members of the Royal College of Veterinary Surgeons, and those holders of the Highland Society's Certificate only, viz.:

Members of the Royal College,	Holders of Highland Society's Certificate,
114.	7.

5. The late Professor Dick laboured hard for fifty years for the welfare of the Scotch Veterinary School, and to show his earnestness for the cause in Scotland, has bequeathed all his property for the maintenance and endowment of the College founded by him. It is evidently the object of the Bill to aggrandise the London College at the expense of Scotch Veterinary Students, or to divert those Students who would be efficiently taught in the Edinburgh School, to Schools in communion with the London College. The Edinburgh College has not sought, and does not seek, to possess the powers vested in the London College; it simply seeks to be protected as a School of Veterinary Science, and it claims tbe status which the institution of a College, having power to appoint Examiners and grant Diplomas, would confer.

5. The question now before the House in no way affects the Royal Veterinary College of London to the detriment of the Edinburgh Veterinary College. The London College has not and does not seek any powers beyond those enjoyed by every recognised Veterinary School in the country. In proof of this, three of the four existing Veterinary Schools are in favour of the Bill.

Robert Nicholson, Womersley.
George Braime, Methley.
John T. Astin, Barnsley.
John Dollar, London.
Edward Colman, London.
W. A. Field, London.
Benjamin Simmonds, London.
Thos. A. Dollar, London.
James J. Farrell, Dublin.
Strettell J. Scott, Dublin.
Matthew Murphy, Parkpath, Dublin.
James King, Belfast.
John McCourt, Belfast.
John Mills, Royal Artillery, Dublin.
Edward Montgomery, Dublin.
Chas. Secker, Knaresbro'.
Thos. Secker, Ripon.
William Henry Stowe, Warwick.
George Armitage, Bicester, Oxford.
William Mason Brooks, Breedon.
Robert Scott Dodds, Alnwick, Northumberland.
Robert Aitken, Felton, Northumberland.
William Bird, Belford, Northumberland.
George Hogarth, Berwick-on-Tweed.
John Bell, Carlisle.
Thomas Illensworth, Cumberland.
Henry Thompson, Aspatrice, Cumberland.
James C. Soulsby, West Hartlepool.
Jno. Bell, Unsworth, Lancashire.
Jas. Lambert, R.A.

6. It is submitted that the Edinburgh School is entitled to the benefits which the creation of a College in Scotland, empowered to appoint Examiners and to grant Diplomas, would confer; and it may be explained that the Institution for whose protection and development assistance is now solicited has neither claimed nor received pecuniary Government support, —that it has been self-supporting, whilst the London Veterinary College has received from Government large pecuniary grants for its establishment, and is materially assisted in its continuance by the contributions of Life and Annual Subscribers.

The assistance of all friendly to the protection and development of so nobly endowed an Institution as that provided for by the late Professor Dick, especially Scotch Members of Parliament, is solicited, to prevent the "Veterinary Surgeons' Bill," now before the House of Commons, passing, and to obtain an independent Charter for Scotland.

6. The Constitution of the Veterinary Profession is based on the total independence of the Teaching Schools from the Chartered Body. The Chartered Body is national, and as much Scotch as English; whereas the Schools are local, and equally empowered, under Royal Sign Manual, to educate and send up Candidates for examination to the Royal College of Veterinary Surgeons. No advantage can possibly arise from dividing a small profession into two very unequal portions, the one English and the other Scotch. If a Royal College of Veterinary Surgeons be created for Scotland, the prejudicial influence of competing Boards will doubtless be felt.

The Edinburgh College can have no object in obtaining a separate Licensing Body for Scotland unless the Licensing power be vested in itself. This would strike at the very foundation of the Veterinary Profession as incorporated by Royal Charter, and is at variance with the spirit of the age, as indicated by the course adopted by the Medical Profession.

The statement with regard to pecuniary support does not refer to the Royal College of Veterinary Surgeons, which has from its commencement been entirely self-supporting.

The Parliamentary Committee further reported, that in consequence of important communications from Scotland and elsewhere relating to the Veterinary Medical Bill, and also one from Mr. Holland which indicated the motive for the opposition on the part of the Scotch members, they were of opinion that Mr. Holland should be informed that the Council was at a loss to understand what special hiatus the proposed Scotch Royal College has to fill.

The Secretary then read a second letter received from Mr. Holland, dated June 9th, 1866, in which he stated that there would be a conference on Tuesday the 12th, at 3 p.m., in the tea-room of the House of Commons, and requested that one or two members of the Council would attend to represent the Royal College of Veterinary Surgeons.

The Secretary was instructed to write to Mr. Holland, acknowledging the receipt of his letter, informing him that the following gentlemen, viz., Professors Spooner, Varnell, Gamgee, and Mr. Wilkinson, and the Secretary, would be present at the conference.

By order of the Council,

W. H. Coates, *Secretary*.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The members of the Lancashire Veterinary Medical Association held their fifteenth quarterly meeting on the evening of June the 7th, 1866, at the Royal Institution, Moseley Street, Manchester; W. Haycock, Esq., the President, in the chair. Present—Messrs. Thomas Greaves, P. Taylor, Thomas Taylor, James Taylor, A. Lawson, W. Whittle, W. Challoner, W. Williams, John Greaves, John Lawson, — Whittle, G. Brown, James Brooks, James Wood, A. Challoner, — Cartwright.

The President opened the business of the meeting by calling the attention of members to the loss sustained by the profession in the death of Professor W. Dick, of the Edinburgh Veterinary College, and that of Mr. Friend, V.S., of Liverpool.

Mr. Peter Taylor, V.S., delivered some appropriate remarks upon the occasion. He enumerated the various services rendered to the profession by the late Professor Dick, and concluded by proposing that a letter of sympathy and condolence be forwarded by the Society to Miss Dick, of Edinburgh. This was seconded by *John Lawson*, Esq., V.S., and carried unanimously.

It was also proposed by *Mr. Thomas Greaves*, V.S., and seconded by *Mr. A. Challoner*, V.S., that a letter of sympathy and condolence be also forwarded by the Society to Mrs. Friend, of Liverpool, upon the death of her husband, A. E. Friend. Carried unanimously.

The minutes of the last meeting were then read and confirmed.

The following gentlemen were nominated as members of the Society:—Mr. Breakell, Garstang, by *Mr. J. Lawson*; Mr. W. Taylor, Stockport, by *Mr. Thomas Greaves*; Mr. James Paton, by *Mr. W. Challoner*; Mr. Septimus Lambert, jun., by *Mr. P. Taylor*.

Mr. Peter Taylor then moved that the Secretary and Treasurer of the Society give in a statement of the accounts annually at the December meeting, at the expiration of their term of office, and that the same be printed and issued with the ordinary circulars of meeting. The motion was seconded by *Mr. Thomas Greaves*, and carried.

Mr. Greaves then proposed that the time of meeting should, for the future, take place at 5 o'clock p.m., instead of 7 p.m. as heretofore. *Mr. Whittle* seconded the motion, which was carried unanimously.

The President then called upon Mr. James Taylor, V.S., Oldham, to read his essay upon Castration. The essay was listened to with attention, and afterwards caused a very animated discussion; and at the conclusion *Mr. Greaves* proposed a vote of thanks to the Essayist for the practical character of his paper, seconded by *Mr. J. Lawson*.—Carried.

A vote of thanks being awarded to the President, the meeting terminated.

James Haslam, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The tenth quarterly meeting of the North of England Veterinary Medical Association was held at the Rose and Crown Hotel, Durham, on Thursday, 25th April, when the following members were present, viz.—Mr. H. E. Wikinson, President; Messrs. C. Hunting, Wm. Allison, M. Hedley, D. Dudgeon, — Bryden, and J. Hutchinson.

The minutes of the previous meeting were read and confirmed.

Mr. Hunting read a paper entitled "Was it Rinderpest?" in which he referred to a case of a heifer belonging to Mr. Emmerson, Castle Eden, which came under his notice. The animal was allowed to live ten days after being affected, when it was destroyed. No other cases have since occurred on this farm.

After the reading of the paper an interesting discussion took place. Some of the members related allied instances which had come under their notice, and described the different symptoms and *post-mortem* appearances the animals presented. Some considered the case referred to by Mr. Hunting as being a very doubtful one, and stated that they should have expected other symptoms and appearances besides those described, but none could say that the appearances were compatible with any other disease.

Mr. Dudgeon proposed, and *Mr. Hutchinson* seconded, a vote of thanks to Mr. Hunting for the very interesting case he had brought before the meeting.

Mr. Wilkinson noted the circumstance that none of the Durham members were present, and expressed his regret that such should be the case, in which the members present coincided.

Mr. Allison, Thornley, consented to read a paper at the next meeting on "Enteritis in Horses."

Mr. Hunting proposed, and *Mr. Hutchinson* seconded, that Mr. Henry Peel, V.S., West Hartlepool, be admitted a member of this Society.

WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

A Meeting of the members of the West of Scotland Veterinary Medical Association was held in the Bedford Hotel, St. George's Place, Glasgow, on the 13th June, 1856, President Cockburn in the chair, when the minutes of the last meeting being read and approved of, *Mr. McBride*, in a few remarks, mentioned the loss

which the profession had sustained since their last meeting in the decease of Professor Dick, one of its brightest ornaments, and concluded by moving that a letter of condolence be sent to Miss Dick, sympathising with her on account of her bereavement. This was seconded by *Mr. Robinson Greenock*, who cordially coincided with Mr. McBride's remarks, and was unanimously agreed to.

It was resolved, and unanimously agreed to, that there is a great necessity of procuring a charter for the bestowal of a veterinary diploma for Scotland, more especially as it is arranged that the curriculum, duration of study, and the general management of the Veterinary Colleges of Scotland are to be vested in trustees properly appointed for that pupose, and that this will be a great boon to the profession and public at large: for the attainment of this object the Association will do everything in their power.

Messrs. Cockburn, jun., and Armitage were proposed members of the Association, which was seconded and agreed to.

Mr. McBride was called upon by the President to read his communications on "Prolapsus of the Rectum, Ting, and Palpitation of the Heart in an Ox."

The subject of this communication was a case of palpitation of the heart, evinced in a three-year-old bullock which he was called on to attend. When first seen, the animal was standing, and appeared very much excited. Attention was quickly drawn to a dull, thumping sound, as if the ribs were struck on the inner surface by a hammer, which apparently proceeded from the region of the diaphragm, and could be distinctly heard six or seven yards off. The pulsations were seventy per minute, and the respirations thirty-three; the sounds were seventy per minute, and heard just before each pulsation. From the absence of any other symptom, the diagnosis was that the bullock was suffering from palpitation of the heart. On the owner being informed that he had nothing to fear, that it would be right in a few days, he thought that it would be better to kill it, being no doubt influenced by a salutary dread of the cattle plague. On a *post-mortem* examination being made of the viscera, nothing was elicited to change the diagnosis.

This paper elicited a considerable amount of discussion, and it was held by the President, Messrs. Anderson, Robinson, and others, that the sound was caused by the diaphragm, and not by the heart. Mr. McBride, however, held that it was palpitation of the heart, and proved, on physiological grounds, that it was altogether different from hiccough, especially as the sounds were of the same number as the pulsations.

The proceedings were then brought to a close by a vote of thanks being accorded to the President.

JOHN ADAM MCBRIDE,
Secretary.

PERMANENT TESTIMONIAL TO THE LATE PROFESSOR DICK.

YESTERDAY, June 13th, a meeting was held in the Royal British Hotel of gentlemen desirous to honour the memory of the late Professor Dick by a permanent testimonial. The chair was occupied by Sir Alexander Ramsay Gibson Maitland; and among the other gentlemen present were—Bailies Falshaw and Russell, Dr. Alexander Wood, Dr. Dalziel, Messrs. H. Stephens, Mylne, Niddry Mains; Hope, Fentonbarns; Wilson, Cowden; Melvin, Bonnington; Gray, Northfield; D. Curror, J. Richardson, Darling, Richmond, &c. &c.

Sir A. R. Maitland stated the object of the meeting. He said that shortly after the professor's death he got a letter from a friend and neighbour proposing that something should be done in the way of a testimonial to his memory, and offering his own help to enlist others in the cause. Testimonials were, perhaps, too freely given now-a-days, but no one ever deserved better of his friends than the late Professor Dick. They all knew the services the deceased gentleman had rendered to veterinary science, and how much indebted all who were connected with stock had been to his exertions. From 1818 to his death he had carried on the teaching of veterinary science, and the practice of veterinary art in this city, with the greatest energy, zeal, and success, and at his death he had left a very handsome gift to the city. He (Sir Alexander) had no doubt the proposal to erect some testimonial to Professor Dick would be very heartily gone into. He was a man who had conferred great benefits on them all in his lifetime, and he had left his mark on the times in which we lived.

Bailie Falshaw moved—"That this meeting sincerely regrets the loss which the agricultural world has sustained through the death of Professor Dick, and desires to express sincere sympathy with Miss Dick in her affliction."

Mr. Hope seconded the motion. He need not say a word in eulogy of the late Professor Dick, their present chairman, in his recent speech at the Highland Society, having anticipated all that could be said. He had for many years attended the annual examinations held by Professor Dick, and he never came away without feeling that he had learned something which he had not known before. He was sure they would all deeply sympathize with Miss Dick, but she might have at least this consolation, that she had contributed not a little, by the domestic comfort and happiness she bestowed on him, to enable him to fulfil the public duties of his life.

Dr. Alexander Wood moved—"That, fully appreciating the great exertions of the late Professor Dick to promote improvement in practical and scientific veterinary education, this meeting resolves to raise some permanent memorial to his name." He said it might almost be thought unnecessary in them to raise a memorial to the

name of Professor Dick, seeing he had already done so for himself. At a time when veterinary science was at the lowest ebb, Mr. Dick, by that energy of character which distinguished him to the last, and with that scientific turn of mind which was peculiar to him, established a veterinary college in this city; and he might appeal to the chairman, and other landed proprietors throughout Scotland, as to the effect of Professor Dick's exertions in sending forth through the length and breadth of the land men thoroughly able to deal with all the diseases of the lower animals. His acquaintance with Professor Dick was now of very old standing. He remembered more than a quarter of a century ago, when he was a student of medicine in Edinburgh University, that there was a man of burly form and energetic language who appeared at their scientific meetings, and who then seemed to him to have been born with a nature hostile to humbug of every kind. (Laughter and applause.) This hostility continued to be the distinguishing feature of his career through life; and though it naturally provoked a certain amount of dislike on the part of those who did not like to hear a spade called a spade or a rogue a rogue, now that he was in the grave all such feeling would be forgotten. They all remembered how strenuously he had striven to improve veterinary science, how he lost no opportunity of benefiting humanity, and how disinterested he was—practising his profession not for gain, but for the love of veterinary science. (Applause.) His love to it and to the place in which he resided had been notably shown in his bequest to the city—a noble gift, which he thought could not be too highly appreciated. He might mention that he had been in London for the last two or three weeks on business of another kind, but he had heard a great deal of talk about a bill attempted to be thrust through Parliament, apparently intended for the benefit of a certain institution in London, and which modestly proposed to make the Veterinary College of Edinburgh a subsidiary part of it. It seemed to be considered by some that the Scotch were not competent to conduct veterinary examinations, and that we were to pay a submission in Edinburgh regarding veterinary science which we had never been asked to do in ordinary medicine, in surgery, in law, or in divinity. It was thought necessary we should have roving commissioners sent down from London to tell us whether a gentleman educated at our Veterinary College was competent to practise his profession. He sincerely hoped the friends of the late Professor Dick, and of the College which he instituted, would, for the honour of their native country, tell Parliament that Scotland was just as competent to examine her own students, as she was qualified to grant degrees, through the universities or royal colleges, in medicine or surgery. He thought the Edinburgh College had been left by Professor Dick so admirably equipped, that it was in a position to rival even the English College itself. He had again and again heard it said, that such was the poverty of the Veterinary College here, that it must shut its doors for eight years till funds accumulated for carrying it on. He begged to give that statement the most unqualified contradiction; but even if it were the case, he

believed the necessary funds would be raised in a week by the friends of the late professor. He could not help thinking that the attempt to draw away from them the right of granting diplomas was an indication of poverty, not on the part of the Edinburgh but of the London College, and he thought it was not too much to ask that that College, so nobly gifted to the city by Professor Dick, should receive a royal charter, and be put on a permanent foundation. As to the form of the memorial, he believed that which would most have commended itself to the mind of the late Professor Dick was the foundation of some professorship, bursary, or fellowship in connection with the College. (Applause.)

Mr. Melvin seconded the motion, remarking on the devotion of the deceased to the school which he had founded, and to the cause of veterinary science, having repeatedly refused to go to London, where he would have made a fortune; and having at home studied not his own interest, but the interests of others.

Mr. Darling, late of Melbourne, moved the appointment of a committee to carry out the object of the meeting. He stated that he had come from Australia about twenty years ago to study veterinary medicine under Professor Dick, having chosen his school in preference to all others, from the reputation which, even in that distant land, his name had acquired. He was glad on this occasion to take part in a meeting assembled to do honour to his memory.

Mr. Richmond seconded the motion, and a large committee was appointed, with power to add to their number.

Mr. Mylne then read a letter which he had received from Mr. Finlay Dun, late of Edinburgh, expressing the hope that some step of this kind would be taken. A suitable memorial would, the writer thought, be found in the establishment of bursaries, to be awarded annually or as frequently as the funds permitted, to veterinary students who for two or three sessions have diligently attended the classes at the Edinburgh Veterinary College, have taken their diploma or degree, and have been selected from their fellow-students by examination. These pupils might receive during two or three winter sessions £50, £60, or £70, as could be spared from the funds, attend regularly various classes connected with the medical schools, and devote besides at least two hours daily at the Edinburgh Veterinary College to anatomical demonstrations, or other such work as required of them by the principal. By such a useful arrangement a great stimulus would be given to the teaching at the Veterinary College; and a superior and valuable class of students would thus be trained, who would lend efficient aid in promoting veterinary science, and from whose ranks the teachers of the several colleges would obtain well-educated assistants. To any scheme of this description I shall gladly contribute £5 5s. as a very small token of the regard in which I hold the memory of Professor Dick.

All the resolutions were unanimously carried, and a vote of thanks was tendered to the chairman.

MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS WHO HAVE BEEN APPOINTED INSPECTORS FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton
Jones, A. A., Biggleswade
New, A., Ampthill
Rogerson, T. W., Bedford

Berkshire.

Allnutt, Henry, Windsor
Bailey, Robert, Lambourn
Bland, W. C., Newbury
Buckridge, W., Hungerford
Drewe, G. A., Abingdon
Field, W. A., Newbury
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Waterman, C., Reading
Wheatley, W. A., Reading

Buckinghamshire.

Beeson, S., Chalfont
Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
East, William, Princes Risborough
Lepper, Henry, Aylesbury
Lepper, George Andrew, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Rayment, S. J., Ashendon
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Barrow, Richard, Newmarket
Barrow, W., ditto
Barrow, Charles, ditto
Holl, Lewis, Outwell, Wisbeach
Knowles, Robert, Wisbeach
Scruby, Thomas, Royston
Sparrow, S., Cambridge
Wallis, Page, Cambridge
Webb, G. B., Balsham, Linton

Cheshire.

Barker, George, Brereton, near Congleton
Barker, Richard, Middlewich
Darling, James, Duddon, Tarvin
Darwell, George Henry, Knutsford
Dunn, William, Tarporley
Greaves, John, Altrincham
Maxfield, Robert, Congleton
Taylor, John Boardman, Hyde
Willett, W. G., Northwich
Wyche, T., Wilmslow

Cornwall.

Arnall, George, Bodmin
Hire, Edward, Penzance
Lamb, G. W., Liskeard
Page, George, Truro
Tucker, E. S., St. Germans
Raddall, Warne, South Petherwin

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Fisher, John, Whitehaven
Little, Joseph, Alston
Thompson, Henry, Aspatria

Derbyshire.

Flower, Henry, Derby
Hudson, T. T., Bolsover
Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, James, Exeter
Austin, Thomas D., Honiton
Bickford, Alfred, Totnes
Bickford, W. J., Kingsbridge
Brewer, William, Barnstaple
Collings, John J., Plymouth

DEVONSHIRE (*continued*).

Dyer, Richard H., Torquay
Ferris, William, Dartmouth
Gregory, T. D., Bideford
Heath, James P., Exeter
Hewish, John, Barnstaple
Leach, Edward, North-Tawton
Ward, William, Crediton
Watson, Alfred, Tiverton

DORSETSHIRE.

Redwood, Joseph, Dorchester

DURHAM.

Adamson, Thomas, Barnard Castle
Allison, William, Thornley
Dudgeon, David, Sunderland
Foreman, Thomas, Leadgate
Hall, Robert, Stockton-on-Tees
Hedley, Matthew, Darlington
Hunting, Charles, South Hetton
Loades, A. M., Bishop Auckland
Mann, Andrew, Chester-le-Street
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Peele, J. E., Durham
Plews, Thomas, Stockton
Thompson, Thomas, Sunderland

ESSEX.

Arthy, H. B., Stanway
Brook, T., Chipping Ongar
Easton, W. G., Woodford
Helmore, William, Stratford
Hutton, Robert R., Toppesfield
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Taylor, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, Sampford

GLOUCESTERSHIRE.

Morgan, C., Stroud
Thomas, Richard W., Tewkesbury

HAMPSHIRE.

Barford, John Davis, Southampton
Cartwright, Charles, Bishop's Waltham
Clarke, W. M., Christchurch
Colebrook, Charles, Basingstoke
Gates, Robert, Andover
Gould, George James, Southampton
Gregory, J. B., Portsmouth
Redford, Thomas, Winchester
Verney, R. G., Stow-on-the-Wold

HEREFORDSHIRE.

Barling, F. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Hirst, Charles, Barnet
Proctor, Harrison, Hertford
Rogerson, Ed., St. Albans
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Hockerell
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.

Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cooper, John, Ashe-next-Sandwich
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst. W. Henry, ditto
Fordham, George, Willesborough
Gregory, T., Tunbridge
Hogben, Henry, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington
Noakes, Henry, Brenchly
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Anderton, J. W., Burnley
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, J. W., Worsley
Cunliffe, Thos., Church
Ellis, John, Liverpool
Ellis, Peter, ditto
Gibson, A. L., Manchester
Haslam, J., Manchester
Heaps, William, Preston
Heyes, Gilbert, Liverpool
Kirkman, James, Blackburn
Lawson, Alexander, Bolton

LANCASHIRE (*continued*).

Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Nuttall, Ed., Rawtenstall
Polding, J. P., Bury
Richmond, Henry, Chorley
Rothwell, J. P., Rochdale
Smith, Benjamin, Ulverston
Smith, John, Ormskirk
Taylor, W., Manchester
Taylor, James, Oldham
Twist, Charles, Woolton
Welsby, Joseph, Prescot
Worthington, Wm., Wrightington
Yates, John, St. Helens

LEICESTERSHIRE.

Bailey, E., sen., Leicester
Bailey, Edward, jun., ditto
Blunt, H., Lutterworth
Brown, S., Melton
Goodall, H. J., Waltham
Gray, Charles, Kibworth
Wiggins, John, Market Harborough

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston
Chapman, John, Gainsborough
Clarke, Thomas Allan, Horncastle
Clayworth, Joseph, Spilsby
Cutting, Henry, Market-Rasen
Darby, Thomas, Louth
Dickinson, J. G., Boston
Dobson, John, Wragby
Dobson, R. W., Holbeach
Gresswell, Daniel, Louth
Hall, William, Northkillingholme
Hardy, R. T., Sleaford
Hardy, Robert, Grantham
Howse, Henry, Lincoln
Hutson, Curtis, Market Rasen
McHugh, John T., Brigg
Metherell, Richard, Spalding
Roberts, John Thomas, Long Sutton
Santy, Arthur H., Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle
Wattam, John, Stamford
Wentworth, George, Laceby
Wilson, Robert, Caistor
Wyer, Daniel, Folkingham
Wyer, Goforth, Donington

MIDDLESEX.

Boughton, Thomas Peter, Hounslow

MIDDLESEX (*continued*).

Broad, James C., Market Street, Paddington
Dale, William, Stanmore
Dexter, Thomas, 8, Motcombe Street, Chelsea
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Leggatt, J., Hanwell
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shaw, H. R., Sydenham
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Stanley, Thomas, Edmonton
Tegg, George, Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth
Wiltshire, Thomas D., Rhymney, near Tredegar
Wilkes, Thomas, Newport

NORFOLK.

Baldwin, George Thomas, Fakenham
Barcham, Robert, Paston
Beart, Walter James, Lynn
Bower, W. J. T., East Rudham
Buckingham, John, Barnham Broom
Buckingham, H., Harleston
Carter, Charles N., Swaffham
Carter, James, Litcham
Carter, Richard, East Dereham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Aylsham
Ellis, William, Hempnall
Emms, Henry G., Foulsham
Hammond, John, jun., Bale, Thetford
Heffer, Robert, Downham Market
King, Edward James, Diss
Mays, Thomas, Wymondham
Overed, John Davey, Blofield
Plumbley, George H., Skeyton
Rattee, Daniel H., Hapton
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich

NORFOLK (*continued*).

West, John, Thetford
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Aris, Benjamin B., Wellingborough
Branford, Wm. Catton, Oundle
Dawson, Jacob, Kettering
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Richardson, W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long-benton
Cope, W., Newark
Boag, William, Morpeth
Fairbairn, John, Alnwick
Hubbick, Joseph, ditto
Hunter, H., Newcastle-upon-Tyne
M'Gregor, Daniel, Seaton Delaval
Stephenson, C., Newcastle-on-Tyne
Wilkinson, Henry Etridge, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Barlow, Robert, Cotgrave
Cave, Thomas, Nottingham
Cope, W., Newark
Hudson, Richard, Moorgate, Retford
Hutchinson, Henry, East Retford
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Talbot, Francis, Whatton
Wilson, Stretton R., Ollerton
Young, Wm., Southwell

OXFORDSHIRE.

Bull, Alban, Hooknorton
Jennings, William, Bicester
Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury
Wadlow, C. H., Oxford

RUTLAND.

Parnell, Charles, Oakham

SHROPSHIRE.

Atcherley, James, Bridgenorth
Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Dorrington
Jenks, John, Ellesmere
Jones, James B., Ludlow
Litt, William, Shrewsbury

SHROPSHIRE (*continued*).

Roberts, Thomas, Oswestry

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Coles, William, Kilmersdon
Dring, C. J., Bath
Emms, William, Ilminster
Hutchings, William, Kimpton
James, Sidney, Frome
Symes, Charles, Wincanton
Symes, Thomas, Yeovil
Whitmore, George, Landport
Whitmore, Absalom, Shepton Mallet

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Cartwright, H. J., Wolverhampton
Checketts, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Richard, ditto
Pritchard, Harry D., Wolverhampton
Robinson, William, Tamworth
Walters, Robert George, Newport

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes, W., John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lowe, C., Dockhead, Bermondsey
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham

SURREY (*continued*).

Moon, James, Kingston-on-Thames
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.

Burt, Walter, Brighton
Burt, William, jun., ditto
Callow, John, Horsham
Crofts, Henry, Arundel
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Elkington, R., Coventry
Hunt, R. L., Edgbaston
Ison, William Charles, Atherstone
Mather, Frederick, Warwick
Parker, J. M., Birmingham
Proctor, Alfred B., Meriden
Rose, James, Warwick
Stanley, Edward, Birmingham
Stanley, Wm. Thomas, Leamington
Walker, Alfred, Rugby
Watson, Walker, ditto

WESTMORELAND.

Eastcott, W., Kendal
Herd, John, Appleby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Coleman, John, Salisbury
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Barker, E. T., Pershore
Blakeway, Francis, Stourbridge
Boulton, R., Bromsgrove
Harber, W. Alex., Kidderminster
Huntress, J. R., Dudley
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, J. W., Skipton-in-Craven
Barker, Charles, New Malton
Barker, William, Middlesborough

YORKSHIRE (*continued*).

Bourdass, George, Bridlington
Bowman, J., Elvington
Bowman, Thomas, Croome
Boyce, J. H., Goole
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, Bradford
Cooper, J., Market Weighton
Cortis, Richard, Shipton
Cuthbert, John, Leeds
Danby, F., Driffield
Day, Frederick, York
Dearlove, William, Harrogate
Douthwait, William, Beverley
Dray, Edward C., Leeds
Edmundson, W., Hornby
Elam, William, Huddersfield
Emmot, D. C., Keighley
Fallding, S. F., Wakefield
Freeman, Joseph, Hull
Fryer, J., Kirby
Harrison, T. M., Thirsk
Hedley, F., Richmond
Hedley, J. W., ditto
Holt, H. L., Northallerton
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Lockwood, N. J., Kingston-upon-Hull
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Naylor, E. M., Wakefield
Nicholson, Robert, Womersley
Patterson, Charles, Dewsbury
Pemberton, G. H., Knaresborough
Pennock, James, York
Ringrose, J., Weaverthorpe
Robinson, A. E. G., Snaith
Scriven, William, Aberford
Secker, Charles, Knaresborough
Secker, Thomas, Ripon
Stevenson, John, Whitby
Stoddard, John, Richmond
Stone, Matthew, Doncaster
Taylor, W. Baxter, South Anston
Thornton, James, Easingwold

WALES.

Brecknockshire.

Ferris, John, Brecon
Llewellyn, H., Brynmawr, Brecon
Stokoe, Thomas, Hay

Cardiganshire.

Bodington, George, Canton, Cardiff

Carnarvonshire.

Williams, Rumsey James, Rhyddallt

Denbighshire.

Edwards, John, Abergele
Kennedy, Thomas, Wrexham
Rowlands, David, Llanrhaiadr-yn-Mochnant, Oswestry

Pembrokeshire.

James, D. E., Old Bridge, Haverford West

SCOTLAND.

Aberdeenshire.

Snowball, Matthew C., Huntley
Thompson, James, School Hill, Aberdeen

Ayrshire.

Aitken, William, Kilmarnock
Irvine, William, Pirleyhill, Girvan
Tennant, C., Tunnock, Maybole

Berwickshire.

Baillie, James, Lauder
Hogarth, George, Berwick
Lothian, William, Dunse
Watson, Robert, Coldstream

Clackmannanshire.

Knight, Robert, Alloa

Dumbartonshire.

Gardner, James, Alexandria
M'Dougall, James, Old Kilpatrick
Sproull, James, Milngavie

Dumfriesshire.

Paterson, Bell Robert, Dumfries

Edinburghshire.

Aitken, John, West Hart Street, Dalkeith
Currie, John, Caitha Stow
Grainger, James, Rosewell, Lasswade, Edinburgh
Worthington, William, Clyde Street, Edinburgh

Fifeshire.

Balfour, Andrew, Balwearie Mill, Kirkcaldy
Duncan, A., Colinsburgh
Morris, John, Torryburn, by Dunfermline

Forfarshire.

Keay, James, Forfar
Lyon, William, Forfar
Sandeman, James, Kerriemuir
Taylor, Alexander, Brechin

Haddingtonshire.

Muir, Alexander C., Dunbar
Storie, Francis, East Linton, Prestonkirk
Young, George, Haddington

Kincardineshire.

Low, John, Auchinzeoch, Fordoun
Robertson, Alexander, Stonehaven
Simpson, Andrew, Fettercairn

Kinross-shire.

Hepburn, John, Milnathort, Kinross

Kirkcudbrightshire.

Irving, John, Castle Douglas

Lanarkshire.

Cockburn, William, Glasgow
Finlater, Richard, Carstairs-by-Lanark
M'Call, James, Glasgow
Pettigrew, Robert, Strathaven
Robertson, Adam C., Airdrie
Steele, John, Biggar
Young, David, Hamilton

Linlithgowshire.

Borthwick, John, Kirkliston
Nimmo, Alexander, Linlithgow
Nimmo, Andrew, Linlithgow

Peeblesshire.

Ferguson, Patrick, Peebles.
Young, William, Hallmyre Dean, Leadburn

PERTHSHIRE.

Connacher, Charles, Perth
Galloway, Peter, Loan of Errol.
Glennie, Mathew, Camp Muir, Coupar-Angus
M'Gregor, Andrew, Mouzievaird, Crieff
Panton, John, Blair Athole
Robertson, Donald, Kenmore, Dunkeld
Robertson, John, Madderty, Crieff
Smail, D. C., Blairgowrie

RENFREWSHIRE.

Donaldson, John, Paisley
Pottie, Alexander, Renfrew
Robinson, Alexander, Greenock

ROXBURGHSHIRE.

Bowie, Messrs. Andrew and James, Hawick
Robertson, William, Kelso
Smith, Alexander, Appletreehall, Hawick

STIRLINGSHIRE.

Waugh, William, Stirling

MISCELLANEA.

RINDERPEST IN AUSTRALIA.

WE have been favoured by Professor Armatage with the following copy of a postscript to a letter received by him from a member of the profession in Australia, which would seem to show the appearance of rinderpest in that country:

P.S.—"I had nearly forgotten in my haste to mention it is whispered, and generally understood, that a disease of a new and terrible type has made its appearance in Sydney and neighbourhood, probably from India. If this be true, it will be sad indeed for stockowners. Packing-cases of straw, hay, or paddy grass would form a nidus for the propagation of a virulent poison; and in the absence of that, the importation of cattle would convey the contagion."

OBITUARY.

WE have to record the death of Mr. Paul Anthony, M.R.C.V.S. late of Rotherham, which took place June 16th, 1866. His diploma bears date May 11th, 1853.

THE

VETERINARIAN.

VOL. XXXIX. No. 464. AUGUST, 1866. Fourth Series. No. 140.

Communications and Cases.

OBSERVATIONS ON THE CATTLE PLAGUE IN IRELAND AND THE CATTLE DISEASE IN THE ISLE OF MAN.

It is not remarkable that cattle plague, being a new disease to the present generation of scientific men in this country, should have excited so much interest, and that opinions upon the subject should have been, in the heat of discussion, too hastily advanced. The time has not arrived for the history of the affection to be written, but some preliminary questions imperatively demand solution, and, principally—Is it necessary to decide the exact amount of evidence required to prove the existence of cattle plague in a locality? In pursuing this important inquiry it may be premised that it must be determined upon how little and not upon how much evidence the question can be answered, because the presence of all the evidence renders an investigation superfluous. If a disease, presenting the general characteristic features of a malady which has previously committed extraordinary devastations in one part of the country suddenly appears and commits extraordinary devastations in another part, the fact of identity is at once admitted, and the admission would not be negatived if a scientific inquiry were to result in the discovery of certain differences in the symptoms and morbid changes; but it should be obvious that, if this amount of evidence is insisted upon before the fact of the presence of a certain malignant and infectious disease be

accepted, the proof involves a serious injury to the community, by preventing the use of those means which have been proved to be efficacious in arresting the progress of the infection, and which means are only applicable on the assumption that the malady against the propagation of which these measures are to be directed is really existent.

It might fairly be expected that the mere announcement that cattle plague had appeared in any part of a country, providing that announcement were made on reasonably good authority, would at once obtain universal credence, and lead to the immediate adoption of restrictive means by public consent and concurrence; but so far from this being the case there is, even on the part of those whose interests are most implicated, a disinclination to accept the statements of scientific men upon so simple a matter of fact. Differences of opinion upon the pathology of the disease may be anticipated, but as to the mere question of its presence no confusion can possibly arise in the mind of any one who has devoted himself to the investigation of the phenomena with which it is invariably associated. We do not intend, even by implication, to assert that no errors have been committed, that animals have not been condemned as suffering from cattle plague when they were affected with other diseases; but we do intend to assert that any scientific observer, who enters upon an inquiry with a competent knowledge of the characters of the disease, and pursues his investigation in an impartial spirit, must infallibly arrive at a correct conclusion.

The indications of the existence of cattle plague are of the most decided character, the symptoms and post-mortem appearances are well understood, there has been no lack of opportunities for investigating the various morbid changes, and very few among the diseases of men or animals have excited so much attention, or been made the subject of such minute and elaborate investigation, as cattle-plague has, and upon none has the investigator a right to speak with more authority.

One of the causes of popular scepticism, possibly the principal one, is the general ignorance which prevails upon the value of evidence; the fact that philosophers differ among themselves is sufficient to overthrow their reputation for infallibility; and, instead of accepting as true the assertion of scientific men, the public, seizing upon some general and easily recognised characteristic, elevate it to the rank of a standard of comparison by which opinions may be tested; and if, as it commonly happens, the one general character is

not apparent to their observation, without any further inquiry the subject is dismissed as not proven.

In reference to cattle plague, the one general characteristic which is apparent to the popular mind is its virulence; it is expected, in proof of its own identity, to spread with rapidity and to devastate the stock of the country; upon what its ravages depend are matters that do not enter into the question; the whole logical force of the public mind is compressed into a syllogism:

Cattle plague devastates the stock of a country;
The disease in question has not devastated the stock of the country; therefore—
The disease in question is not cattle plague.

Undoubtedly, the testimony furnished by the destructive course of the plague is conclusive; but for the inquirer to wait for the development of this evidence would be tantamount to an absurdity, as the same result would follow without his assistance, and the very object of the inquiry be lost.

It is an obvious inference that whenever an investigation becomes necessary to determine the nature of a disease, the evidence must be in some degree incomplete, otherwise no doubt could exist upon the subject. If this be admitted, and it is difficult to see how it can be denied, we are free to consider the original question, which is—

What is the amount and exact kind of evidence which is necessary to enable the inquirer to arrive at a conclusion upon the subject of the existence of cattle plague among the stock of the country?

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 464.)

Having past in review most of the diseases to which the horse is liable as regards the head and fore extremities, it is high time to look upwards again towards the withers.

I have purposely avoided making any remark relative to "Phlebitis," as I shall hereafter have occasion to dwell briefly upon some affections of the heart, and shall then refer to the jugular vein and its diseases. The integument covering the superior spinous processes of the fourth,

fifth, and sixth dorsal vertebræ is sometimes seen puffy, or, in other language, we now and then take cognizance of a small soft tumour at this part of the horse during our examinations as to soundness. We also occasionally find one under the saddle as well as immediately under the cantel. These tumours, when small, are said to be "nothing" by the owners, of course; nor are they, as a rule, of any moment, for they seldom interfere with the usefulness of an animal in the state in which it is likely we shall meet with them. The affection is of some standing, so that any inflammatory action which might have been present to cause inconvenience or loss of service has passed away many a day; but if the animal should happen to wince or show temper on its being touched, or on passing the hand over the swelling, it becomes necessary to dwell a moment before passing it by. If the horse is pained or made restless and troublesome by touching the tumour, you may depend that it has some time or other been a source of annoyance to him. If it has become old and the saddle not likely to interfere with it, it may be well to pass it without many remarks; if, however, the purchaser should object to the presence of such affections, and refuse to confirm the bargain in consequence, asserting that he understood the animal was a perfectly sound one, then it becomes a somewhat nice question to decide. I have before given the great "law-lords'" decision upon the point, viz., "that if a pimple prevents the putting on a bridle or saddle, the animal is, for the time being, unsound." And so it *may* be said of a swelling of this kind; but it is necessary "to well and truly try" the putting on of a saddle, and instructing a heavy rider to get into the saddle, to see if there be any interference produced by it. If the animal evinces no disposition to wince and the part is free from pain on pressure, I don't think it will constitute unsoundness, except we bear in mind Mr. Baron Alderson's definition of the word "sound"—that to be sound it must be perfect. It is, doubtless, one of those cases a practitioner may meet with once or twice in his lifetime, when the buyer of a horse has, *prior* to the examination, repented of his bargain and determined to take advantage of the displacement of a hair in order to get out of it. This he will do through his veterinary surgeon. These things frequently happen; that is, a man believes he has paid more than the value of the horse, and wishes to be relieved by the animal being rejected. It is not fair, perhaps, for a buyer to take such an advantage of the seller, but it has been argued that buying a horse is similar to the purchase of a piece of crockery; the price put upon it is supposed to repre-

sent the price of the sound or perfect article, and if, upon examination, a flaw is found to exist, it is rendered returnable. And so it is with a horse. If the animal is represented as a sound one, the buyer, upon the faith of the assertion, agrees to give a certain price for it upon the conditions that he likes it upon trial and that it passes the scrutiny of his veterinary surgeon. Should the animal—as I before remarked—have any infirmity about him by which a quibble can be made, the purchaser has a right to refuse to take his purchase, provided the examiner stands by him and pronounces the animal *legally un*sound. Now and then such a client is to be met with—fortunately not often—for they are men only too glad to get another to do their dirty work. These affections are not likely to appear in any other shape at or during an examination. Fistulous withers will never be present in any case produced before us. No man would so far forget himself as to sell an animal subject to a veterinary surgeon's examination with a disease of such magnitude; the only thing we have to take care of is that the swelling is not a recent one, and, if so, that it is too trifling to degenerate into a troublesome complaint. One thing must be borne in mind—some animals are more prone to these affections than others. I remember a purchase my father once made when I was a very little boy, certainly not more than eight years of age. At the horse fair held at Winchester, at the time I mention, was to be seen a fast-trotting bay cob. My father, his friends, and myself especially, felt desirous that the cob should be purchased, as he was considered an "*out-and-out goer*." I shall never forget the speed he travelled, and it was remarked many times during the day that the cob never tired. Towards evening my father concluded the deal and brought home the nag. He said to my mother, "Look here! I've bought a capital pony." She had been a good horsewoman in her day and was fond of horses; she said, "Take off the saddle and let me look at him." The saddle was removed, and in a moment it was learned the reason the cob was so good a goer; he had a swelling centrally placed just behind the withers the size of my closed hand, and the saddle had been pressing upon the sore the whole day. It made such an impression upon my mind that I make it a rule to remove from a horse everything which man has placed upon him before I examine him, save and except the bridle. This new purchase was placed under the care of the doctor and was not used for some time.

Having cast our eyes over the back and loins, we usually look under the abdomen to learn if there be any defect, such

as hernia. We sometimes meet with umbilical and sometimes ventral hernia; neither of these is calculated to do any harm unless through strangulation. Both are an unsoundness.

Scrotal hernia is not infrequently met with. Some very quaint remarks are occasionally made by persons bringing horses to the veterinary establishments for inspection. One man will lay blame to the gelder, and declare that before he was cut the *lump*, as it is generally termed, was not there. Another will say it is "air," and that it disappears after a little while, and that it can be of no consequence.

I have seen a large number of these cases, but never heard of any going wrong after purchase. In this instance it will appear how necessary it is to keep a horse standing for a short time. At a fair it is not easy to detect an affection of this nature, and yet we are supposed to know all the defects in an animal at the time he is examined. There can be but one opinion formed in this case, and that is, of course, that the animal is unsound.

The hip-joint ought to fall in for a fair share of our scrutiny, after which we cast a glance at the patella; these parts are so seldom found wrong during our examinations that it is not worth while entering upon their diseases.

(*To be continued.*)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 453.)

Having briefly described the botanical and other characteristics peculiar to the *Digitalis purpurea* (Foxglove), it will now be necessary to consider both its medicinal and poisonous properties.

As a medicinal agent, its effects are very powerful, and it should never be administered without the greatest caution and continual watching. It has been extensively used both in human and veterinary practice, but in both it appears to have proved very uncertain in its action, and amongst our own patients several deaths have been recorded as resulting from either too large a dose or from its accumulation in the system. In human medicine *Digitalis purpurea* is generally employed as an indirect sedative, first exciting and then greatly diminishing the force and frequency of the heart's

action. "It has been used to control the circulation in diseases of the heart, in fever, and inflammations, and in pulmonary affections after the acute symptoms have subsided." It is much used in dropsies as a diuretic, especially those resulting from constitutional debility.

The following remarks from Professor Morton's 'Materia Medica' will indicate the diseases in which it is used in veterinary practice:—"Its use is advocated in pneumonia, hydrothorax, carditis, and many other diseases in which the action of the heart is inordinate; also in chronic cough." He also recommends twenty or thirty grains given in the form of ball, which may be repeated during the day. It should not be forgotten that this agent sometimes accumulates in the system, and after several administrations without any apparent effect suddenly exhibits itself in the most violent form. In reference to the symptoms, Professor Morton says—"Those that I have witnessed have been nausea, paleness of the mucous tissues, feeble and irritable pulse, coldness of the skin, and extreme languor, followed by a relaxed state of the bowels. In very large doses it seems 'at one fell swoop' to palsy the heart and render life extinct, without any injection of the membranes or lesion of any of the tissues being perceptible after death." From a result like this, which sometimes attends the administration of this very powerful agent, and the uncertainty of its value as a medicine, would it not be well to dispense with it altogether, and trust to those substances whose influence on the system is better known, and whose effects, as a rule, are entirely under our control?

As a poison, the *Digitalis purpurea* acts both upon the animal and vegetable kingdoms. In Pereira's 'Materia Medica' it says, "Marcet found that a solution of the watery extract of foxglove killed a haricot plant (*Phaseolus vulgaris*) in twenty-four hours. The effects of foxglove have been tried on dogs, horses, rabbits, turkeys, the domestic fowl, and frogs; and on all it has been found to act as a poison." In a horse killed by two ounces of foxglove the pulse was 130 per minute a short time before death (Moiroud). The cerebro-spinal symptoms observed in animals are diminished muscular power, convulsive movements, tremors, and insensibility.

The activity of the *Digitalis purpurea*, both as a medicinal agent and also as a poison, depends chiefly upon a substance named Digitaline. It is obtained from the leaves by a complicated process, and presents the following amongst other characters. It is white in colour, and generally appears in

scales; has no odour, but excites sneezing, and has an intensely bitter taste. It is very soluble in alcohol, but slightly so in water and ether.

The following remarks from Pereira's 'Materia Medica' will exhibit the effects of this powerful agent:—"The effects of digitaline on both animals and the human subject have been examined by Homolle, and by Bourchardat and Sandras. From their experiments it appears that its effects are similar to those of the plant. In the human subject doses of from 2 to 6 milligrammes (from about 1-32nd to 1-11th of an English grain) diminished the frequency of the pulse, and caused nausea, vomiting, griping, purging, and increased secretion of urine."

(*To be continued.*)

THE VETERINARY MUTUAL DEFENCE SOCIETY.

Gentlemen,—The first annual general meeting of the above society being about to be held (see advertisement on the wrapper), I beg by your permission to appeal to the profession for more general support.

As most readers of the *Veterinarian* are aware, the objects aimed at by this society are twofold—first, defence against unjust actions at law; second, the establishment of a fund for the support of the widows and orphans of unfortunate members of the profession.

Proposals for the formation of societies having these objects in view have for many years been occasionally advocated in these pages, but further than that little, if anything, was done till the summer of last year, when the subject was taken up by the Liverpool, Lancashire, and Yorkshire Veterinary Medical Associations, and at a meeting held in Manchester a code of rules was, after considerable discussion, drawn up and agreed to, and officers were appointed for the current year. Since then these rules have been printed, and some five hundred copies have been distributed among the profession. Members have been enrolled in most of the principal towns of the kingdom, and amongst others, I am happy to say, the present President of the Royal College of Veterinary Surgeons and the two previous presidents, as well as several members in the Council and Professors in several of the colleges; yet there has not been that general response from

the great body of the profession which it was expected there would have been by its promoters, and which it must be self-evident to every one is absolutely necessary to render such a scheme successful.

What can be the reason of this supineness in our ranks in such a cause? Some say the rules require amendment. My answer to that is, if you think so why does that deter you? Enrol yourself as a member, bring your amendment forward at the annual meeting—you shall have a fair opportunity of stating your views—and if they are satisfactory to the majority, they will be adopted. Some, again, object to the amount of the annual subscription. This I conceive to be anything but a valid objection. What is it? *Twenty-one shillings per annum, or a fraction less than fivepence per week.* Can any reasonable man say that such a subscription for such an object is too large?

I am anything but a rich man myself, being possessed of no means but those which I have earned by hard work, yet I should feel ashamed to urge such an objection, when I know that by the payment of this small sum I was contributing to ease the mind of some unjustly accused brother, or that these individual pence might some day assume the form of a building in which our needy professional brothers with their wives might find a comfortable home in their old age.

But to accomplish such desirable objects necessitates the combined action of the profession; and unless this society obtains more general support it must ultimately fall through. The ship has been fairly launched, her flag flutters in the breeze, her officers are at their posts, but unless her muster-roll is greatly increased it is useless to bring her into action. Brother practitioners, shall this appeal be made in vain? No interested motive prompts it, for all appointments are honorary; my only aim is the good of the profession, and in advocating the claims of this society I feel I am only doing what England expects—"That every man shall do his duty."

I am, &c.,

GEORGE MORGAN, M.R.C.V.S.,
Hon. Sec.

The Editors of the 'Veterinarian.'

Facts and Observations.

Diseased Meat and its Effects on Man.—Dr. Thudichum, in a paper lately read by him before the Society of Arts, stated that there is only one disease of a specific nature which can be transplanted to man from the lower animals, and that is the malignant pustule or anthrax, a malady of rare occurrence. The entozoa, or "worm" class of diseases, are more common and more dangerous. The lecturer stated that fish introduced into man their own class of worm, veal and beef supply the great hookless tapeworm, whilst pork gives the hooked tapeworm. All of these were shown in a magnified form by the aid of the oxy-hydrogen microscope. Most of the worms have flat heads, with a circle of hooks in the centre, and four or five suckers round the circumference. These hooks are worked and wrenched into the flesh of the sufferer by strong muscles in their rear; the suckers then hold on firmly, so that the worms can rarely be dislodged without tearing away some of the intestine or other part of the body to which they are attached. The *Trichina spiralis*, at the root of the pork disease now causing such devastation in Germany, is a worm which it is believed produces about 1000 living young in the course of a fortnight. Dr. Thudichum produced a living rabbit full of the disease, and, picking a small piece of flesh out of its back, put it under the microscope; several of the worms were then observed curling on the screen. They are not killed till boiled a very considerable time, and the best measures to prevent the disease are to give the pigs good food, to examine the flesh under the microscope, and to cook it thoroughly before eating. Mice and rats are much infested by the worms, and the pigs sometimes catch the disease by eating the dead bodies of these animals.

Difference between a Plant and an Animal.—It may be said of a plant that it lives and grows by drinking, and not by eating; "for a plant is not like an animal, endowed with special organs to dissolve the food and make it ready for absorption; this preparation of the nutriment is assigned by another law to the fruitful earth itself, which in this respect discharges the functions performed by the stomach and intestines of animals." It is of no use to a plant if the soil contain all the constituents it requires to promote its growth, if they are not in such a state as can be made available; and the first requisite is that they must be

soluble, and the second requisite is the presence of water, for water is the vehicle that conveys nutrition alike to the plant and animal. The quantity of water that enters the roots of a plant is so great that the fertilising matter held in solution is in a state of extreme dilution; and, in fact, a concentrated solution of fertilising matter acts upon a plant in an analogous manner to an atmosphere of pure oxygen upon a living animal—in short, it stimulates it to death. Water then modifies the stimulating property of fertilising matter, and tends to produce a steady and healthy growth, just as the nitrogen of the atmosphere modifies the stimulating properties of the life-giving oxygen.

The Rapidity of Nerve-force.—In one of his recent lectures at the Royal Institution, Dr. Du Bois Reymond pointed out the analogy subsisting between the nerves and telegraph wires—the former, like the latter, being insensible to the impressions they convey, and being merely the media through which sensation is transmitted to various parts of the body. Though the transmission of sensations is so rapid that the effect seems to be instantaneous with the exciting cause, nevertheless it is not so, and there is in reality an interval of time between the prick of a pin on the foot and the perception of the sensation—an interval so minute, indeed, as to be inappreciable, for no space of time less than the tenth part of a second can be distinguished by the natural powers of man. By mechanical contrivances, however, very much smaller portions of time can be observed and noted; and by this means, with the aid of electricity, the velocity of nervous agency has been determined. Dr. Reymond exhibited several curious and complicated experiments, in which the nerves of a frog recently killed were excited by secondary voltaic currents, and the contraction of the muscles thereby produced was shown by magnifying the effects, so that in one case a small flag was raised, in another arrangement the effect was seen by releasing a trigger, and in a third case lines were stretched on a blackened glass, that were afterwards exhibited by the electric lamp. Dr. Reymond pointed out the results in several diagrams. From these it appeared that the transmission of nervous agency, when compared with the velocity of light or electricity, was very slow, for while the latter is reckoned by millions of yards in a second, the former passes at the rate of only twenty-five, so that, as he observed, a very appreciable interval would elapse between the striking of a whale with a harpoon and the sensation of a blow. The time occupied in the transmission of volition

from the brain to the hands or feet can also be estimated by means of similar apparatus, the action of which depends on the same principle by which the velocity of a shot from a cannon is ascertained by electrical agency.

Absorption of Heat in reference to Colour of Bodies.—Professor Tyndall, in a lecture delivered at the Royal Institution of Great Britain, says—"We are reminded of the experiments of Franklin, which consisted in placing cloths of various colours upon snow, and observing the depth to which they sank in the snow when exposed to direct sunshine. Franklin concluded that the lighter the colour of the body the less is its power of absorption. The generalisations founded on this experiment are, for the most part, fallacious. Results long ago obtained, establishing the vast influence of chemical constitution on radiant heat, led the speaker to contrast iodine, an element, with alum, a body of highly complex character. Both substances were in powder, the one being dark, the other white. Exposed to the radiation from various sources, the white powder proved itself in all cases the most powerful absorber. The dark powder of amorphous phosphorus was also compared with the hydrated oxide of zinc, but the white powder was the best absorber. Bodies of the same colour compared together showed similar differences. The red oxide of lead, for example, was contrasted with the red iodide of mercury, and the oxide proved the most powerful absorber. So also the white chloride of silver was compared with the white carbonate of lead; the lead salt proved by far the most powerful absorber. In this way it was proved that, as regards the absorption of radiant heat, white in some cases exceeds black, black in some cases exceeds white, and the other colours are equally capricious, all evidently depending on the chemical constitution of the substances. Here, as in other cases, moreover, radiation and absorption go hand in hand, the substance which absorbs heat most powerfully radiating the same heat most copiously."

On Suint.—Several communications, says the *Chemical News*, "On Suint," were presented to the Academy of Sciences of France. This, as our readers will know, is the perspiration of sheep condensed on the wool. It is a kind of soap, the base being potash, which MM. Maumené and Rogelet propose to separate by evaporating the washings of fleeces and incinerating the residue. An account of their methods will be found in Dr. Hofmann's 'Exhibition Report.' M. Eymard now proposes to separate the fatty

acids, which he believes to be good for greasing ropes. The chemical composition of suint has been investigated by M. Chevreul, who now adds another communication on the subject. He has discovered in it a large number of acids and bases also—indeed, twenty-nine bodies altogether. The acids are as follows:—Carbonic, phocenic, and an undetermined volatile acid *x*, a crystallisable fatty principle, probably an acid; stearine, elaieric, a colourless crystallisable acid; another, orange yellow and uncrystallisable, a nitro-sulphuretted acid—these three forming together a brown liquid; a nitro-sulphuretted matter insoluble in water; sulphuric, silicic, phosphoric, and oxalic acids. And now M. Chevreul adds another, *elic acid*. This is a liquid at ordinary temperatures, and has a density a little above that of water. It is colourless, reddens litmus, insoluble, or nearly, in water, but soluble in ether and absolute alcohol. It forms a baryta salt, which is soluble in a proper proportion of water, but a dilute solution deposits a superelate. Here, says the author, is a fatty acid, affecting the form of oleic acid, but giving a soluble baryta salt, soluble in water, which, in an excess of water, behaves like the soluble stearates and margarates. MM. Maumené and Rogelet describe suint as neutral; M. Chevreul says he always finds it alkaline. The former chemists assert that no soda is present in it; M. Chevreul hints his disbelief in that statement.

The Drawings of the Cattle Plague Report.—We understand that the Cattle Plague Commissioners have, with the consent of the scientific reporters, presented to the College of Physicians the valuable collection of original coloured drawings made by Messrs. Tuson and Burgess illustrative of the pathology of the cattle plague, from which are taken the illustrations in the recent report presented to Parliament. Having seen many of these original drawings, and compared them with the chromo-lithograph copies published with the report of the Royal Commission, we cannot help remarking that the lithographers have not been very happy in reproducing the admirable works of the artists above named.

Horseflesh as Human Food.—Horseflesh for the future, under certain regulations, is to be permitted for sale to the Parisian eating-house keepers. They must publicly notify their use of horse-meat. Special slaughterhouses are to be appointed, and diseased horses are forbidden by the ordinance. A veterinary inspector must attend at killing times, and the joints are to have a stamp affixed to them.

A Substitute for Ipecacuanha in the treatment of Acute Dysentery.—In the *Indian Medical Gazette* for May, Mr. J. J. Durant, the civil assistant-surgeon at Shahabad, states that he has found the powder of an Indian drug, called *Mudar*, an excellent substitute for ipecacuanha in the treatment of dysentery amongst the native population. In every acute case in which he prescribed mudar it either effected a complete cure in a few days or at once changed the character of the disease from bloody and mucous to bilious diarrhœa. He administers it in similar doses to what are usually given of ipecacuanha, never beginning with less than one scruple, and seldom going beyond one drachm. He usually gives it alone, but when a weak stomach is suspected in the patient he combines it with carbonate of soda, creasote, bismuth, prussic acid, &c. Like ipecacuanha, mudar, in large doses, is a reliable cholagogue; it is also a sedative to the muscular fibres of the intestines, particularly of the rectum and colon, rapidly allaying all pain, tenesmus, and irritation, and putting a stop to dysenteric action. Its most marked effect is the production of a copious flow of bile, which follows its use in about twenty-four hours. *Mudar* is the native name for *Calotropis gigantea*, a plant which grows abundantly in sandy waste places. The powder is prepared from the bark or rind of the root. It has a slight smell, and is of a lighter yellow colour than ipecacuanha.

A Density Test for Unguentum Hydrargyri.—Mr. Gustavus Pile, an American, suggests that the specific gravity of the ointment is one of the best tests of the quantity of mercury it contains. To prove the efficacy of the test, he experimented with ointments of two different strengths, the one containing fifty grains of mercury to the hundred grains of preparation, and the other containing forty-nine grains to the hundred. The specific gravity of each was taken, and the result was, for the first, a density of 1·700, and for the second 1·683, showing a difference of ·017, corresponding to a single grain. Certain precautions should be observed in estimating the density of the unguent. It should be carefully introduced into a 1000-grain bottle, so that the neck may not be soiled; 103 grains will suffice. Having been gently melted, it is set aside to cool. After filling the bottle with water at 60° Fahr., the weight of the contents is observed, and the specific gravity calculated in the usual manner.

Improvements in the Microscope.—Amongst the more important discoveries in connection with the applica-

tion of the microscope to the purposes of anatomical research we must allude to the little contrivance devised by Messrs. Powell and Lealand, by means of which the binocular microscope may be employed with the very highest objectives. Hitherto only such powers as the 1-inch, $\frac{1}{2}$-inch, $\frac{2}{3}$-inch could be used in the production of stereoscopic effects; but now the binocular microscope ceases to be a toy, and the most elaborate histological inquiries can be conducted with it. Messrs. Powell and Lealand's contrivance consists simply of two prisms, one of which is triangular and the other somewhat rectangular in section, by means of which the rays proceeding from the object are sent, partly by reflection and partly by refraction, to both the observer's eyes. The new addition to the microscope is cheap, and, since it occupies the drawer into which the ordinary Wenham's prism is fitted, it should be attached to every working instrument. Another improvement connected with microscopy consists in the employment of pure tin in the preparation of "cells" in which objects are mounted. The new cells, as constructed by Mr. Charles Collins, of Great Titchfield Street, are less costly and more easily manipulated than those of glass, and answer the purpose equally well.

Vessels and Nerves of the Ligaments and Fibro-cartilages.—If we are to believe the statements in most of our treatises on histology, the ligaments and fibro-cartilages are by no means well supplied by nerves and vessels. M. Sappey, however, thinks otherwise; and, in a memoir just presented to the French Academy, he has demonstrated the opposite. In this essay he describes very fully, and under their several heads, the vascular and nervous parts of the ligaments and cartilages. Of the interarticular cartilages he says those of the knee are the most abundantly supplied with nerves and vessels. The vessels run at first nearly parallel with the connective-tissue fibres; but soon they divide and subdivide and anastomose, so as to form the most exquisite reticulations, which terminate in elegant festoons. The veins follow the course of the arteries. In the fibro-cartilages of the joints the vessels pass from the periphery towards the centre, but they penetrate only to a depth of three or four millimetres. The periarticular fibro-cartilages, or *bursæ*, are still more vascular. Both these sets of tissues receive numerous nerves, which sometimes lie with the vessels and at others pursue an independent course. The ligaments are also well supplied with vessels and nerves, especially the latter, which are more numerous than those of the skin. In

the tendons the supply of nerves and vessels is less marked. As regards their nervous and vascular supplies, the tissues described in M. Sappey's memoir follow this order:—(1) The ligaments and periarticular fibro-cartilages; (2) the tendons and aponeuroses; and (3) the interarticular fibro-cartilages.

Is there such a thing as Spontaneous Cow-pox?—An extremely interesting paper on this subject has been written by M. A. Chauveau, and published in the *Comptes Rendus* (tome lxii, No. 21). M. Chauveau has given experimental proof that the so-called spontaneous cow-pox is really transmitted, and that the effects of the virus entirely depend on the mode of transmission. He supposes the powder of the vaccine scab to be suspended in the air, and in this way to be introduced into the lungs of cattle. To try this experimentally, he injected the matter directly into the vessels of eight horses; in four animals it was introduced into the blood-vessels, and in four into a lymphatic vessel. The following were the results:—In the first series there was no perceptible consequence. In the second all but one showed, on the seventh to the twelfth day, a fine eruption, having all the characters of what is called "spontaneous horse-pox." This, says the writer, proves manifestly that one can produce what is called spontaneous cow- or horse-pox at will, simply by introducing the virus into the lymphatics instead of into the blood-vessels.

The Adductor Muscle of the Thigh in Domestic Animals.—The following conclusions may be drawn from the recent investigations of M. Goubaux:—1. In the horse, ass, dog, cat, and rabbit, the adductor of the thigh is composed of *three* portions, which may properly be styled three muscles—the short, great, and small adductors of the thigh. 2. In the ox, sheep, goat, and hog, the adductor of the thigh is composed of *two* portions—one which corresponds to the muscle called great adductor in the animals of the first series, and another which corresponds to the small adductor.

What is the Myograph?—The myograph is a novel instrument, which has been devised by M. Marey, the celebrated inventor of the sphygmograph, for determining the vibrations of the muscular fibres. It is employed only in connection with the muscles of animal life, and it records graphically the vibrations of these just as the sphygmograph records pulsations. The vibrations of the fibres of muscles have already been determined by Haughton, Helmholtz, and others; but M. Marey has gone further, and, by introducing

the method of autographic registration, has shown the exact nature of the influence of fatigue and disease (muscular and nervous) over these vibrations. The myograph consists of a sort of forceps, which embrace the limb experimented on, and one of whose arms rests upon the muscle whose vibrations are to be determined. This is the only movable limb of the forceps, and it is, therefore, thrown into vibrations during the contraction of the muscle. The forceps are connected with the wire of a galvanic battery, and by this means the muscle is at pleasure thrown into action. The remainder of the myograph is upon the plan of the sphygmograph, and comprises a system of levers and drums, on which the register of the vibrations is traced.

The Structure of Ganglia.—In Robin's *Journal de l'Anatomie* for June M. Polaillon gives a long memoir upon the minute anatomy, development, and pathology of the peripheral nervous ganglia. If, he says, we isolate a ganglion and its principal nerves from the cellular tissue which surrounds it, and pursue the dissection from the nervous branches towards the ganglion, we see that the neurilemma is continued over this organ so as to form a sort of matrix for it. The envelope of the ganglia has the same structure as the neurilemma; that is to say, it is composed of strata of the white and elastic fibres of connective tissue, which mix freely together. It sends out numerous partitions, which divide the ganglion into several minute compartments, each of them containing groups of ganglionic globules, which, in their turn, are separated by more delicate layers of connective tissue. Hence the adhesion of the several parts is so great that it is impossible to dissect a ganglion without destroying it; and the only ganglia which can be satisfactorily examined are those of the fœtus of a young mammal. The proper tissue of the ganglion consists essentially of globules or ganglionic cellules, nerve-fibres, amorphous matter, septal elements, a few elastic fibres, and, finally, blood-vessels.

The Brain of Fishes.—The homologues of the brain in fishes have always been difficult to determine; but if we are to believe M. Hollard, who has just published an essay on the subject, the difficulty no longer exists. M. Hollard has drawn the following conclusions from his observations. We find in the brain of fishes three ventricular divisions, which correspond to the three primitive cerebral vesicles. The anterior and posterior regions become divided into two distinct sections. The inferior cerebral organization of the

fish relates to the anterior sections, the intermediate cerebrum or nucleus, and the anterior brain or the hemispheres. The intermediate brain corresponds to the fundamental part of the nucleus of the cerebrum. The inferior lobes represent the corpora striata. The anterior lobe of the brain of fishes corresponds to that part of the hemispheres which is nearest the corpora striata. M. Hollard's paper is accompanied by several drawings. (See the *Journal de l'Anatomie*, No. 3.)

A simple Method of Preparing Peroxide of Hydrogen.—As peroxide of hydrogen is occasionally employed in medicine, our readers may be glad to know of any easy method of preparing the substance. This has been suggested by Schœnbein, and is briefly as follows:—Put some pieces of granulated zinc in a large bottle with a little distilled water, and shake the bottle violently for a few seconds. Oxide of zinc and peroxide of hydrogen are formed, but no mercury or zinc remains in solution.

A New (?) Disease among Animals.—At Athens a malady unknown has broken out amongst the beasts of burden. The animals, seized with a sudden fit of rage, tear their own flesh.

Fifteen Persons Poisoned by Veal.—Fifteen persons, having partaken of some veal at Newtownards, county Down, were seized with symptoms of poisoning. Two of them died. The calf from which the veal was obtained is said to have died of distemper.

Purification of Sulphuric Acid.—In toxicological investigations it is imperative that, whenever sulphuric acid is used, it should be free from its common impurity, arsenic. Ordinary distillation will not remove this, but by boiling the suspected acid with a little nitric acid, by which means the arsenious acid becomes converted into arsenic acid, and then distilling, the product will be pure, the arsenic acid remaining behind in the retort. A little bichromate of potash is stated to be equally effective.

Effects of Light on Grass.—M. Bourgeois grew some meadow grass, part of which was exposed to sunshine, the other grown in a shady place. After its conversion into hay he found that horses ate with avidity the former, while they refused the latter, which arose, he considers, from the absence of the odoriferous principle. There can be no questioning the beneficial influence of light on growing vegetables, as the formation of many of the organic radicles is dependent upon it.

THE VETERINARIAN, AUGUST 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

A CAUSE FOR THE CONTINUANCE OF CATTLE PLAGUE.

The steady decline which has taken place in the number of cases of cattle plague since the operation of the present legislative measures would be a satisfactory assurance that the disease would soon be exterminated but for one circumstance in particular—one upon which we have endeavoured from the beginning to fix public attention. The circumstance thus alluded to is the fact of other animals being susceptible to the disease, and of its having prevailed among sheep to a greater or less extent from a short time after its appearance in England. During the past five or six weeks cases of this kind have been far more numerous than before, especially in those parts of the country where the system of agriculture calls for the movement of large bodies of sheep from place to place. Infected sheep have been both unwittingly disposed of by farmers and exposed by dealers in our cattle markets. In the eastern counties serious losses have already been sustained thereby, and several of the recent outbreaks of cattle plague among bovine and other animals, both here and elsewhere, have been satisfactorily traced to infected sheep. A notion has prevailed, and unfortunately rather extensively, that sheep are insusceptible of plague. We could afford to smile at the pretended knowledge which has given origin to this idea were it not for the mischief it has produced. Should cattle plague again increase, no small amount of responsibility will rest with those who have done their best to disseminate this false doctrine. Some, we fear, have acted from sordid motives, and have looked to enriching themselves rather than to the interests of the public. Others, doubtless, have been blinded by ignorance; nevertheless they have not been unwilling to be led captive at her will.

Both, however, have done much mischief, although it may be that both are not equally responsible. A desire to be thought learned in sheep diseases, beyond others who have had long acquaintance with the subject, has also in some instances been the motive power impelling men forward to resist the truth. Even those who admit the possibility of sheep being affected with cattle plague will often speak confidently of a cure, and will repudiate the statement that other than lambs are the subjects of the malady. Our experience entirely disproves this belief. Sheep of all ages, of every variety of breed, and under all kinds of management, fall a sacrifice to the disease, and in about the same proportion. If, indeed, there be any difference as to susceptibility, it is found on the side of youth, very young lambs often enjoying greater immunity than others.

We cannot on this occasion pursue this subject further, notwithstanding its great practical importance. In saying what we have we only make another effort, feeble though it be, to save the stock of the country from impending death, and many farmers from consequent poverty. We would urge the members of the profession to be, if possible, even more on the alert than they have been in ascertaining the existence of disease among sheep. When called to cases, let them spare no pains in thoroughly investigating the nature of the affection. Even should a doubt exist on the point, let them lose no time in reporting the whole circumstances to the local authority, that precautionary measures may be adopted. By such a course of procedure they will give additional proof of their worth as a profession in the time of their country's need, and do themselves no little good by resisting the spread of ignorance and the progress of empiricism.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

A Manual of Practical Hygiene. By Edmund A. Parkes, M.D., F.R.S., Professor of Military Hygiene in the Army Medical School, &c. &c. Second edition. London: John Churchill & Sons.

"Hygiene is the art of preserving health, that is, of obtaining the most perfect action of body and mind, during as long a period as is consistent with the laws of life. In other words, it aims at rendering growth more perfect, decay less rapid, life more vigorous, death more remote." Such is the definition given by Dr. Parkes of the all-important subject upon which he so ably writes, in the work to which we are now directing the attention of our readers.

Dr. Parkes' manual has been "prepared especially for use in the medical service of the army," but the most cursory glance through the book, or even at the table of contents, will enable one to see that it is teeming with information of the highest practical importance to those engaged in the preservation and maintenance of the health, whether of man or of the lower animals, and of the greatest interest to even the unprofessional or general reader.

In order to convey some notion of the kind of subjects treated by our author, we proceed to name a few which we extract from the "Contents:"—"*Water;* quality and composition, characters of good drinking, examination, purification, consequences of an insufficient or impure supply. *Air;* composition, impurities, purification, effect of disinfectants on the specific diseases, diseases arising from impurities in the air. *Ventilation. Food;* general principles of diet, food in health, food in sickness, diseases connected with food. *Quality, choice, and cooking of food, and diseases arising from altered quantity. Soils;* condition of soils affecting health, general observations on the healthiness of soils, examination of soils, rules for choice of site. *Habitations. Warming. Exercise and Physical Training. Disposal of the Dead.*" In the foregoing list we have done but little more than give the heads of a few of the subjects discussed by Dr. Parkes, yet we hesitate not to state that we feel sure the

readers of this Journal will have observed among such a list of topics many to which they cannot devote too much time and attention.

Not only has Dr. Parkes performed a most laborious task, but he has furnished the public with a treatise which, on account of its practical utility, systematic arrangement, clearness and precision of diction, will doubtless long remain, as it now is, the English standard work on hygiene.

We must not omit to mention that one of the most useful and valuable characteristics of the work is the frequent and exceedingly numerous references which are made to the writings and investigations of other writers and experimenters, and we cannot conclude this notice without heartily recommending the perusal of Dr. Parkes' 'Hygiene' to every one engaged in the veterinary art, or otherwise interested in maintaining the health and vigour of our dumb brethren.

The Druggist's General Receipt Book; comprising a copious Veterinary Formulary, &c. &c. By Henry Beasley. Sixth edition. London: John Churchill & Sons.

The fact of any work passing through six editions is one of the best assurances that its author has been eminently successful in carrying out the object he sought to accomplish, so that any praise which we might feel inclined to award to Mr. Beasley would appear superfluous. Nevertheless we beg to state, for the information of those of our readers who are not already acquainted with the 'Druggist's Receipt Book,' that it contains a large collection of formulæ, obtained from various veterinary writers, for the preparation of medicines employed in the treatment of the horse, the ox, the dog, the rabbit, poultry, and, in fact, the domesticated animals generally. Nor is this the only information to be met with, for we likewise find an exceedingly numerous collection of receipts, not only useful to the veterinarian and the druggist, but also to every housekeeper. Mr. Beasley's work, in short, is one which should be on every one's book-shelf.

Extracts from British and Foreign Journals.

REPORT ON MURRAIN.

By George Armatage, M.R.C.V.S., late Veterinary Surgeon to the Marchioness of Londonderry, and Professor of Anatomy and Physiology in the Glasgow Veterinary College.

Reprinted from the Highland Society of Scotland's 'Transactions.'

Premium—The Gold Medal.

(*Continued from* p. 593.)

Pigs suffer much from irritative fever, and exhibit the symptoms much earlier than most other animals, with the unerring tendency to sloughing of the hoofs. Pain and lameness is early manifested by the screams emitted when required to move; profuse salivation and champing of the jaws indicate the vesicular eruption of the mouth, which is soon followed by ulceration; the appetite is absent; constipation gives way to diarrhœa; cough is present; rapid emaciation comes on, followed by speedy death. At times the skin over the body becomes red and irritable, being considerably elevated, swollen, and inflamed on the abdomen, and on the legs above the hoofs, which is succeeded by ulceration and sloughing if not early attended to. The disease exhibits all the characters of its contagious nature in these animals, and is particularly fatal to young ones, its putrid type being manifested in the rapidity with which the diseased surfaces run on to gangrene.

The fatality, however, has not been so great of late years in all animals, notwithstanding its prevalence—the general characters being much milder than formerly—the mortality, in a majority of instances, being confined to young or pregnant animals; in the latter case, particularly sows and ewes, when the cases of abortion are consequently frequent, and the state of the system so peculiarly susceptible to undue influences, that disease of a complicated nature is set up from which death results. Cattle are not exempt from these complicated additions to pathological states, which exert their powerful influences against a speedy recovery, or otherwise strengthen its virulence and fatal character.

As a rule, murrain cannot unquestionably be called a fatal

disease, apart from such conditions as have just been considered. Under ordinary circumstances, with proper attention, domestic and medical, it has proved of late more and more tractable in its general nature, deaths rarely resulting in adult cattle without one or other of the complications alluded to. It has, however, in the experience of the writer, not been the less contagious, being readily communicated to oxen, sheep, and pigs; neither has it been otherwise than prevalent, though probably not in such extreme degrees as formerly, being confined principally to districts where changes are frequently made and fresh stock introduced from markets. In all cases save one which have come under the writer's observation it has arisen from positive contagion; the exceptional instance not only baffled all attempts to prove its origin satisfactorily, but also somewhat tended to shake any perceived notions as to its positively contagious or infectious nature. The circumstances are as follows:

About sixty head of cattle for feeding purposes were purchased in November, 1863, from a dealer who affirmed they were obtained from farmers in his immediate vicinity, and never been into a fair or market. They travelled a turnpike road for four or five miles, and afterwards by-roads, to their destination, passing several herds of cattle in the adjoining pastures on their way. On their arrival they were put into a large central pasture, where they remained for several weeks, till the weather proving wet, stormy, and cold, and keep scarce, when they were housed, and fed upon Swedes, oat and barley meal, with clover, hay, and cut chaff. The byre which received them had not been tenanted since a previous lot of fat cattle were sold in May previous, and no animals affected with disease of a contagious character had been in them for twelve years, when vesicular aphtha had appeared mildly among the feeding cattle brought from Yarm fair. After the expiration of one month, when each animal had made considerable progress in condition, a heifer standing third from the entrance commenced to salivate and refuse her food, with other symptoms of murrain; and as each animal could reach his or her fellow from the principle of tying up adopted, we naturally augured the existence of a scourge among the number. I should have stated that twenty of the number, when taken up from the pastures, were sent to a farm five miles distant eastward, and immediately tied up in a feeding byre. Ten were forwarded to another farm seven miles south, and placed in boxes, the remaining forty being left at the home farm, where our description began.

Further separation was impossible, and we accordingly prepared for the worst. Each animal was carefully examined; ventilation and cleanliness scrupulously attended to; soft, nutritious, and easily digested food supplied; and medical treatment, both preventive and remedial, judiciously carried out. The next day two bullocks at the furthest extremity of the building, at least sixty or seventy feet from the rest, and separated by several brick walls, were found to be affected. Next, the partner of the cow first affected was seized, and on the succeeding day another cow three or four distant. In all, seven steers were seized, and about twenty-four cows and heifers, at various intervals, extending up to the beginning of March, 1864, the remaing nine never exhibiting the slightest symptoms, although tied side by side with those diseased, eating from the same box, and not infrequently supplied with hay also refused by them.* One cow, in which thirst was excessive, was severely affected, and died from utter prostration caused by the alimentary canal being implicated, with profuse salivation, which amounted to several pails per day, and, strange to state, her companions on each side were not affected. In May, 1864, the whole were sold, *all* in first-rate condition—those in which the disease had appeared in nowise unequal to their more fortunate fellows.

In our desire to account for the appearance of the disease, although willing to make the most of improbabilities, we were placed in great difficulty, which has not been satisfactorily cleared up at the present moment. No disease of the kind was existing upon any neighbouring farm, nor has it occurred since within five miles. The home farm† is six miles from the nearest town, and more than twelve from the usual cattle market, and upwards of three from any turnpike road. Cattle are seldom seen driven along the contiguous lanes, except to the village butchers, which circumstance, coupled with the fact that the main line of railway passes within one field of the byre, are the only points upon which suspicion can rest, as it is well known that the butchers of the village use the market alluded to, and the railway also brings cattle from the same place and others, where murrain is well known to exist. If these facts demonstrate the cause of the outbreak, we have proofs of the delicate nature of the contagion of vesicular

* The reasonable solution to this proposition is that the animals had previously suffered from vesicular aphtha.

† Pensher home farm by Fence Houses—midway between Durham and Newcastle—belonged to Frances Anne, Marchioness of Londonderry.

aphtha, and the facility with which it travels the atmosphere over considerable distances.

Duration of the disease.—In ordinary mild cases the fever subsides in four or five days, convalescence being restored about the fourteenth. The raw surfaces occasioned by the vesicles rapidly heal over, the animal being able to resume the ordinary food about the fifth or sixth day, when improvement visibly takes place, and in many instances much more rapidly than in animals which have not been affected.

In severe attacks, however, great variableness occurs; sometimes weeks, and even months, elapse before recovery is firmly established, the resulting prostration and emaciation combining to render the rearing of animals through the coming winter a difficulty of no slight character. This variety prevailed to some extent in 1852-54-55, and also in 1864; but I have been enabled to trace its virulence in many instances to causes which are under control, such as a want of care in communication, cleanliness, ventilation, and treatment, domestic and otherwise, while other farmers, &c., scrupulous in such matters, although suffering from the contagion, have been exceedingly fortunate.

I have met with but one case of murrain in the horse, and that of a very mild character, arising from the animal being housed in the same byre, and side by side, with milch cows affected. The prevailing symptoms were sore throat and aphthous eruptions in the mouth, with febrile symptoms, loss of appetite, &c., but no vesicles appeared around the coronets. It is a common practice in some large towns, owing to the scarcity of accommodation, to keep the horses and ponies of dairymen in the cowhouses, a stall being set apart at one end. Pigs also are kept under similar circumstances, which have never failed to show early symptoms of the disease, after introduction to the cattle; but in all cases which have come under my care similarly positioned, when pigs have always suffered, all horses, except the above, have escaped. I have known, also, persons affected with what they termed blisters on the tongue while in attendance upon murrained cows; but, in my estimation, symptoms were required to constitute *bonâ fide* aphtha.

Causes.—As far as these in their origin are concerned, we cannot go beyond mere hypothesis. Instances of spontaneous origin are very rare; but it is reasonably supposed that the extreme contagious nature of the disease may be propagated through the medium of the atmosphere, in common with

other diseases of a like nature. The diseased animal products, which are so well known to be poisonous to healthy cattle, undoubtedly furnish the virus in an indefinite form; but in the majority of cases, where it has originated without known actual contact, the precaution of necessary care and attention, in more particulars than one, have been sadly deficient.

Being a disease in which the mucous membranes suffer extensively, and give rise to products of a highly contagious nature, and taking into consideration their great susceptibility to surrounding influences, their capability of absorbing matter in minute division, and to become rapidly diseased in such cases, there is every possibility that murrain may originate in some instances from defective housing, feeding, and want of proper attention to sanitary regulations. The most prevailing causes, however, at present may be traced to the travelling of diseased animals to fairs and markets, on roads, or in steamboats, railway trucks, subsequently used by healthy cattle. Hay, straw, grass, &c., conveyed from one farm to another, or exposed in markets for sale, probably may effect a transmission of the disease. Sheep, by their wool, game, dogs, &c., have also, in common with the clothes of individuals, been invested with a considerable amount of supposed power in its conveyance; and, doubtless, foreign cattle frequently bring it with them, having been landed during the incubatory stage, when actual symptoms were not present. Small farmers and dairymen who use markets for the sale and purchase of stock, particularly in the immediate vicinity of the writer, suffer from the effects of murrain, and also act as effective agents in propagating the disease by direct contagion.

Preventive and remedial treatment.—Of the former, it will be apparent that, in consideration of the subtle nature of the disease, our first efforts should be directed towards arresting or limiting the means by which it is introduced and propagated among our stock. It is obvious also how feeble our efforts must be in this, as in all other conditions of a similar tendency, when the causes are of such imponderable characters, to circumscribe its disastrous effects upon animals to whom it has been introduced. Results are often recognised only when irreparable mischief has been committed, the continued progress of disease certain—the whole herd, without doubt, infected. It is thus when ordinary measures, as isolation and fumigation, &c., are of no avail, the deterioration of stock goes on unimpeded, and in the absence of machinery

of an elaborate and effective nature, I, for one, see but a poor reward for endeavours short of this as general means. The farmer and dairyman, by the exercise of great caution and attention to sanitary regulations, may greatly avert its occurrence among their stock by introducing animals selected from healthy herds and localities; his purchases, when made in public markets, being confined to men of well-known honesty; and particularly when its introduction among mixed stock will affect his profits so materially, a course of quarantine might be adopted with great advantage to ensure exemption from the incubatory stage. Farmers and others who annually let off portions of their land might also exercise rigid scrutiny against cattle to be introduced, and imported cattle affected, or supposed to be so, detained until the crisis is past. The latter proceeding, I believe, is carried out in some, if not all, our large places of import, and I think with benefit, as the exporters are more alive to the necessity of forwarding cattle which are fully believed to be sound; but even under such rigid exertions at places of export, with short and rapid sea passages, and, as before observed, the subtle nature of the disease, all, doubtless, admits of animals being forwarded in which murrain is undergoing the incubatory stage, needing only such exciting causes as the crowding together upon the deck or in the hold of a ship to develop the whole train of symptoms.

Another aspect in which the disease and its consequences may be viewed, and also demands a consideration of the utmost importance, is involved in the proposition—"That it is best, in some instances, to solicit, and even obtain, this disease;" and for this purpose the subject of inoculation deserves a trial as treatment of a prophylactic character on the following grounds:—The most serious losses which occur from murrain do not arise from its fatality or malignancy as a general rule, but from the serious interruption to milking and fattening properties; therefore it should be our desire, if possible, to ensure our cattle having suffered from it prior to the period of their profit and usefulness arrives, more especially since we are aware that generally animals are not usually affected more than once during their lifetime, and that inoculation produces the disease in a modified or less severe form, and produces, as in other diseases of a like character, a greater insusceptibility to its more complicated forms. The peculiar nature of murrain particularly favours this proceeding, being easily communicated from one beast to another. One animal will infect a whole herd, and render quite unnecessary the process of an operation for its con-

veyance. Young cattle of all kinds, before being housed for their respective purposes, therefore, should be seen through the disease, either by being directly inoculated or introduced to some isolated place to others under its effects, all proper domestic treatment being likewise carried out. One or two deaths at this time would not be so severely felt as the subsequent losses in milk or condition in greater numbers.

As with all diseases of similar origin and specific characteristics, all attempts to reduce its actions to the circumscribed limits of our powers and control should be made. Contagious diseases exert their baneful influences by the subtleness of their attack. The minute form and indefinite characters which pertain to their virus and tendency to such erratic and eccentric modes of action specially illustrate the great necessity for exertion to battle against them. For this purpose the principles of thorough ventilation should be carried out, with scrupulous cleanliness; the hands should be washed effectively before milking sound cattle after attendance on those diseased; but what is more desirable, complete separation and distinct attendance. The use of quicklime to the floors with M'Dougall's disinfecting powder is a most efficacious remedy, which should be used also in whitewash for the walls. The disinfecting fluid, manufactured by the same individual, or that of Condy, Burnett, Ellerman, &c., are all more or less indispensable to arrest contagion, as applied to buildings, stall-posts, &c., when fumigation cannot be applied. Chlorine or sulphurous-acid water also are valuable remedies, and readily available for washing the floors, drains, &c. As a fumigation, sulphur may be burned in the closed building, or chlorine gas set free from common salt in the usual way, when all cattle are removed.*

Remedial or curative treatment consists in allaying febrile symptoms by cooling salines, as sulphate of magnesia or soda —in the first instance to produce a laxative effect upon the digestive canal, from half a pound to one pound being required, according to age and size. The mouth should be washed with astringent solutions, as alum water, one or two drachms to eight ounces of water, acidulated solutions, chlorine water, &c. Good food, nutritious gruel, hay tea, good beds, dry houses, and great cleanliness, with friction to the skin when it can be borne, and clothing under exacerbations of fever, &c., will be found more or less useful and beneficial.

* Directions for the special application of these measures will be found at the end of this report.

Mild cases will require no other treatment scarcely—in fact, many recover without—but, in my opinion, our attention should be directed to a course of proper treatment, with a view of paralysing the powers of the disease as much as possible.

In severe cases, however, as typhoid fever rapidly sets in, and almost from the first, depletive measures cannot be sustained beyond the first dose of laxative medicine, which should be compounded with vegetable tonics and aromatics, followed by diffusible stimulants, particularly when the temperature of the body is found to be low, and weakness present, and suppurative process tardy and slow, as an effect of prostration, &c.

All loose portions of hoof should be removed, together with those which favour the retention of matter; in some instances an opening should be made at the solar portion of the foot when matter burrows deeply; abscesses opened as early and as freely as possible, and poultices to the feet, assisted by mild caustics, to promote the healing powers. Strong caustics I have found to be highly prejudicial, especially in milch cows, by their unerring tendency to the increase of irritation or symptomatic fever. The various acids are highly useful, and may used as hereafter directed, free or mixed with the poultice.

In those extreme cases where abscesses form over various parts of the body, due attention must be paid to the state of the bowels *ab initio,* succeeded by the early use of tonics and stimulants—iron with gentian being found highly useful, not only as a topical dressing to the mouth, but as an invigorating agent to the whole system. Liberal diet should be allowed as the patient will take it; but when the extreme soreness of the mouth precludes the possibility of doing so, demulcent drinks, and thick oatmeal and linseed gruel with treacle, should be given with the horn, if the beast cannot take it, in which the iron and gentian may be mixed. Hay tea forms a very agreeable drink, of which most animals will partake, and should be allowed *ad libitum* when diarrhœa is not present or feared to come on. Ale, port wine, and various spirits, are sometimes used, but their more useful counterparts may be obtained in the shape of ammonia, &c., with gruel and treacle, &c. Open the abscesses freely and as early as possible, after which keep them clean and treat as ordinary wounds. The Tinc. Myrrh. composita, Tr. Arnica Montana, or white lotion of the Edinburgh Veterinary College, as prescribed by Professor Dick, form very good compounds, the latter being the most efficacious.

Should the healing process be tardy, and ulceration and sloughing probable, as indicated by a dry unhealthy appearance of the wounds, use the black oils, or spirits of camphor, turpentine liniment, &c.

In affections of the mammary gland the teat-syphon should be used to draw off the milk, and obviate the increase of soreness to the teats by milking. Weak solutions of carbonate of soda injected up the teat of the affected quarter have proved highly successful in my hands, allaying the irritation arising from the retention and coagulation of milk, and neutralizing free acids which are formed within as a result of the resident inflammation. I have also found large doses internally of very great service in these affections, in conjunction with moderate depletive measures, which under these complications the animal will generally bear with much greater safety.

The hyposulphite of soda and iodide of potassium have been attended with marked benefit; and chlorine water, solutions of sulphate or chloride of zinc to the broken vesicles upon the bag of great service also.

Abscesses forming in this part must also receive the earliest attention as previously recommended, noticing this difference —that suppuration, or the formation of matter, does not exhibit the usual characteristic signs of tumefaction and swelling in this organ as when taking place among muscles, &c.; but, on the contrary, is denoted by a depression and sense of pitting under the finger; and mortification is likely to affect the whole or portion, therefore stronger remedies called digestive are needed to promote a free discharge of matter to liberate the internal affected parts. Poultices cannot always be made use of to this organ, particularly under the affection we are considering; but, if possible, their effects for good will be found apparent.

In the first instance of disease seizing the udder the ointments of elder, camphor, mercury, or iodine, will be most beneficial, but not after inflammation has finally become developed.

As a rule, bleeding has not generally been imperatively called for in my practice, the early approach of weakness forbidding it, depletive effects having been sufficiently accomplished by saline medicine.

When affections of the alimentary track appear, as indicated by sore cough, profuse salivation, diarrhœa, colic, &c., the hyposulphite of soda, sulphate of magnesia or soda, with nitre, will be required, and demulcent drinks in small quantities. In urgent stages prussic acid, aconite, hyoscy-

amus or belladona, laudanum, with oil, are highly useful in their various combinations. This form of disease, with the latter complications considered, is the most fatal, producing death by the effects upon the lungs and nervous system. Our most energetic efforts, therefore, to stay the disease in its progress should be directed to the animal in the early stages, as prostration succeeds with such rapid strides as to render all our efforts to rouse the dormant powers unavailing.

Affection of the lungs in cattle as an independent disease, under the denomination of pleuro-pneumonia, is always of a nature to be dreaded, but when dependent upon a combination of causes, and particularly in connection with such states of the system as I have described, the treatment will obviously be of a very hopeless character.

The vascular system in ruminants eminently favours the process of effusion within the interlobular spaces of the lungs and cavity of the chest, which favours the general prostration already brought about; and counter-treatment under such circumstances is often productive of greater harm. If the animal survives to some extent, consolidation or hepatization of the lungs is safe to occur, with adhesions more or less to the sides.

The *post-mortem* appearances presented in animals which have died from the effects of murrain are rendered variable from the complications with which it now and then occurs, the most simple being that in which the animal dies from implication of the digestive organs, utter prostration from want of support, and the effects of profuse salivation being the immediate cause. The muscles of the body are pale, soft and flaccid, and wasted, the secretions being diminished.

Bowels empty, with here and there patches of ecchymosis —internally the membrane is ulcerated, extending from the mouth and fauces to the small intestines, and even the rectum, the fourth stomach participating the most.

In milder cases the third stomach I have found constipated, the mouth and gullet only being affected.

Extreme cases are marked, in addition to the above, by disorganization of the lungs, liver, spleen, or altogether; congestion of the brain and medulla oblongata; the blood resembles treacle, and will not coagulate; patches of ecchymosis and inflammation here and there are found over the bowels.

The condition of pyæmia being in some cases established prior to death taking place, the tendency to early gangrene

present, and rapid putrefaction ensuing, particularly in sheep and pigs.

MEASURES ADVOCATED IN THE FOREGOING PAGES, WITH DIRECTIONS FOR THEIR USE.

1. *Fumigation.*—For this purpose sulphur may be burned on a chafing-dish of hot coals, red-hot irons, &c., or chlorine gas evolved by pouring muriatic acid over the black oxide of manganese, and applying heat to the glass vessel in which the mixture is placed. Another process consists in using slightly diluted oil of vitriol, black oxide of manganese, and common salt, when the gas is rapidly evolved.

2. *Alum Water* consists of 2 drachms of powdered alum to 6 or 8 ounces of water.

3. *Acidulated Solutions.*—Sulphuric, nitric, or hydrochloric acids, in the proportion of half a drachm to the ounce of water for the feet. For the mouth, 1 drachm to 8 ounces.

4. *Chlorine Water* is made by directing a current of the gas from the retort or flask in which it is generated through a volume of water.

5. *Hay Tea* consists of a large handful of clover or other sweet-smelling hay being covered by boiling water in a pail, which, after the lapse of ten or fifteen minutes, is filled up with cold water to the required temperature.

6. *Vegetable Tonics and Aromatics.*—Most useful are gentian and ginger pulverized, in doses of 1 to 2 ounces.

7. *Diffusible Stimulants.*—Aromatic spirits of ammonia—dose, 1 to 2 ounces largely diluted; carbonate of ammonia, 4 drachms do.; liq. ammonia, 1 ounce do.

8. *Poultices* are composed of linseed meal and brewers' yeast.

9. *Mild Caustics.*—See No. 13 and No. 14.

10. *Iron and Gentian.*—Sulphate of iron, 2 drachms; powdered gentian, 1 to 2 ounces.

11. *Solution of Carbonate of Soda.*—2 drachms to 8 ounces of distilled water, as injections for the teats; as an internal remedy, 2 ounces in gruel or water two or three times a day.

12. *Hyposulphite, Sulphite, and Bisulphite of Sodium.*—Internally, 2 to 4 ounces two or three times a day in water, gruel, &c.

13. *Iodide of Potassium.*—1 to 2 drachms, as No. 12.

14. *Sulphate of Zinc Solution.*—10 grains to 1 ounce of water.

Chloride of do. 5 do. do.

15. *Digestives.*—As black oils; rape oil, 8 ounces; sul-

phuric acid, 1 ounce—mix cautiously; ointment of verdigris or acetate of copper; ointment of resin, &c.

16. *Hyposulphite of Sodium.*—2 to 4 ounces two or three times a day; sulphate of magnesia or soda, 2 to 4 ounces three times a day.

Nitre.—Nitrate of potassium, 4 drachms three times a day.

17. *Aconite*, Tincture of, 20 to 30 drops for a dose, ...
Prussic Acid, 5 to 10 drops for a dose,
Hyoscyamus, Tincture of, 2 to 3 fluid oz.,
Belladonna, Extract, 1 to 2 drachms,
} two or three times a day.

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

(*Continued from* p. 599.)

The reader will now be prepared to appreciate the value of tables showing the relative amount of the three great classes of alimentary substances as they are presented by nature in different kinds of food. The chief varieties of food are described in the table on page 669, which indicates the composition of the nutritive portions of food in 100 parts, which, according to the fancy or convenience of the reader, may be taken as 100 grains, 100 ounces, or 100 lb. The table indicates all the important ingredients of food. To show how this table is to be read, let us take bread as an example, and find out its nutritive value in 100 ounces. In the case of bread the table gives the following information, in ounces and tenths of ounces:

100 oz. of bread contain—	
Water	44·8 oz.
Flesh-formers . . .	8·2 „
Starch	44·5 „
Fat	1·0 „
Starch-equivalent of heat-givers .	46·9 „
Ratio of flesh-formers to heat-givers	1:5·72„
Mineral matter . . .	1·5 „
Carbon in flesh-formers . .	4·4 „
Carbon in heat-givers . .	20·5 „
Total carbon . . .	24·9 „

In other words, we are told that in every 100 oz. of bread consumed by us there are about 8 oz. of matter calculated to repair the waste in the body, 47 oz. of fuel to keep up the heat, 1½ oz. of mineral matter for the bones and for carrying on the processes of digestion and assimilation; while we receive the further information that 20½ oz. of charcoal (carbon) are burned completely in the fuel, and about 4½ oz. go in another direction, regarding which we shall have important information to give in the succeeding paper. It may be useful, again, to explain what is meant by the term "starch-equivalent" of heat-givers. The latter consist of fat, sugar, starch, and gum; but each of these have, as we have already shown, a different value as fuel, just as coal, and wood, and peat, have different heating powers in common fire-places. If, therefore, all kinds of fuel were massed together indiscriminately, a very erroneous idea would be given of the heat-giving character of the food; but by converting them all into one value, viz., that of starch, the comparison of one kind of food with another may readily be made.

Water is a large ingredient in all kinds of food. Perfectly lean flesh contains 75 oz. of water in 100 oz. of meat, but the quantity of water varies much in different foods. Thus, flour, oatmeal, and the cereals, generally contain about 13 oz. of water in the 100 oz., while turuips, carrots, potatoes, and parsnips, have from 75 oz. to 85 oz. of water in 100 oz. of the food as sold.

We now proceed to make some general observations on the different kinds of food in the table, remarking, however, that all such tables give only a general and not a perfectly precise information, because, as each beast fitted for the market is more or less fat, so each kind of plant grown varies more or less in its composition. The table is therefore constructed on what may be supposed to be average samples of each kind of food.

It may justly raise a question if it be right to consider all the flesh-formers of equal value, whether they are derived from vegetable or animal aliments. Would, for instance, the 22 oz. of casein in 100 oz. of split peas be equal to the same amount of albumen and fibrin found in 100 oz. of beef? In all probability they would not, for when nature presents us with three materials of like composition—fibrin, albumen, casein—she has no doubt specific functions for them to perform in building up the animal frame. But experience certainly shows us that if we present all these three materials to the body, it can exercise labour and be kept up in strength,

whether they are derived from animals or from vegetables. Let us take the case of a hunt as an illustration. In a hunt an omnivorous animal, a man, is mounted upon a herbivorous animal, a horse; he is attended by carnivorous dogs, which pursue a vegetable-feeding hare or a flesh-eating fox. In the case of all these animals a maximum amount of labour is bestowed while the hunt lasts, but the tissues, which by their waste produced the labour, were built up in some cases by animal, in other cases by vegetable, food. Undoubtedly the nature of the food has much influence upon the character of animals, and of their ability to exercise consecutive and persevering labour; but this is a question far in advance or that which we are at present discussing.

In animal aliments the heat-giving portions are in the form of fat. No doubt fat forms an indispensable part of all dietaries, for we find it also in vegetables as well as animals. In 100 parts of oatmeal there are six parts of fat, and in maize or Indian corn there are seven parts to the 100. And just as we found the flesh-forming principles in vegetables and in animals to be the same, so do we find the same kinds of fat in both kingdoms of nature. Human fat exists in palm oil; the fat of train oil, as got from the whale, is also found in the root of valerian; the fat of mutton and beef exists in cocoa beans. But the simplicity of nutrition, which characterises the assimilation of flesh-formers, is not found to prevail in respect to fats. The latter need not pre-exist in food, for animals may make them out of sugar or starch. A cow forms the butter in milk, though none was in the grass on which it fed; a pig will fatten on potatoes, in which no hog's lard is found; a bee can make wax for the comb from flowers in which there is no wax; and a goose fed on wheat forms fat which was not in the food. So fat, although important as a part of a diet, and forming, in fact, one of the most valuable ingredients of heat-givers, is not essential in the same sense that the flesh-formers are. In fat meat the proportion of the latter to the starch-equivalent of heat-givers is nearly the same as in milk, viz., as 1 to 3. In cheese and in eggs the proportion of the two classes is as 1 to 2.

Going down the nutritious table we come to the leguminous plants, such as peas, beans, and lentils. With the exception of cheap cheese, this class of plants presents us with the most flesh-forming food in the whole table. Lentils ought to form the chief part of the meal sold as *revalenta arabica* (although much sold under that name is chiefly Glasgow pease meal, costing 2*d*. per lb.), and has been long known to us as the "red pottage" for which Esau sold his

Table of Composition of Food in 100 *Parts.* 1864.

Name.	Water.	Flesh-formers.	Heat-givers.	Starch-equivalent of Heat-givers.	Ratio of Flesh-formers to Starch eq.	Mineral Matter.	Carbon in Flesh-formers.	Carbon in Heat-givers.	Total Carbon.
Lean Butcher's Meat free from bone	67·0	23·0	Fat . . 8·0	19·2	1 : 0·83	2·0	12·37	6·16	18·53
Fat ditto, ditto	63·0	15·0	Fat . . 20·0	48·0	1 : 3·2	2·0	8·07	15·4	23·47
Mean of Lean and Fat Butcher's Meat, free from bone	65·0	19·0	Fat . . 14·0	33·6	1 : 1·77	2·0	10·22	10·78	21·00
Fresh Fish, without bone	81·3	12·5	Fat . . 5·2	12·5	1 : 1·0	1·0	6·5	3·8	10·3
Salt Herring	49·0	20·0	Fat . . 12·7	30·45	1 : 1·52	18·3	10·76	9·78	20·54
Milk (new)	87·2	4·0	Fat . . 3·5 Sugar . 4·6	12·5	1 : 3·12	0·70	2·152	4·535	6·687
„ (skim)	88·6	4·0	Fat . . 2·0 Sugar . 4·6	8·8	1 : 2·2	0·77	2·152	3·380	5·532
„ (butter)	89·1	4·0	Fat . . 1·5 Sugar . 4·6	7·6	1 : 1·87	0·75	2·152	2·995	5·147
Cheese (cheap kinds)	40·0	30·0	Fat . . 26	62·4	1 : 2·08	4·0	16·14	20·02	36·16
Eggs (yolk and white)	75·0	12·6	Fat . . 11	26·4	1 : 2·09	1·4	6·788	8·47	15·26
Peas (green)	55·0	7·0	Starch, &c. 35 Fat . . 1	37·4	1 : 5·34	2·0	3·766	16·31	20·076
„ (dry)	15·0	22·0	Starch, &c. 58·5 Fat . . 2·0	63·3	1 : 2·87	2·5	11·836	27·514	39·35
Beans (dry)	12·0	26·0	Starch, &c. 57·0 Fat . . 2·0	61·8	1 : 2·37	3·0	13·988	26·85	40·84
Lentils	12·5	27·0	Starch, &c. 55·0 Fat . . 2·5	61·0	1 : 2·26	3·0	14·526	26·34	40·86
Flour	13·3	14·0	Starch, &c. 70 Fat . . 1·5	73·6	1 : 5·26	1·2	7·532	31·08	38·61
Bread	44·8	8·2	Starch, &c. 44·5 Fat . . 1·0	46·9	1 : 5·72	1·5	4·411	20·52	24·93
Biscuit	13·8	14·2	Starch, &c. 69·3 Fat . . 1·0	71·7	1 : 5·05	1·7	7·64	51·539	59·179
Barley (pearl)	15·1	8·0	Starch, &c. 74 Fat . . 2	78·8	1 : 9·85	0·9	4·304	34·396	38·69
Oatmeal	13·0	16·0	Starch, &c. 62 Fat . . 6	76·4	1 : 4·77	3·0	8·608	32·35	40·95
Maize	12·0	11·0	Starch, &c. 68·5 Fat . . 7·0	85·3	1 : 7·75	1·5	5·918	35·804	41·722
Rice	13·0	6·5	Starch, &c. 79·2 Fat . . 0·8	81·1	1 : 12·48	0·5	3·497	35·781	39·278
Potatoes	75·0	1·4	Starch, &c. 22·5 Fat . . 0·1	22·7	1 : 16·21	1·0	0·753	10·715	11·468
Parsnips	85·1	1·4	Starch . 10·0 Sugar . 2·5	12·4	1 : 8·18	1·0	0·753	5·492	6·245
Carrots	86·5	1·3	Starch, &c. 6·30 Fat . . 0·15 Sugar . 5·00	11·3	1 : 8·70	0·8	0·7	5·417	6·117
Turnips	91·1	1·2	Starch, &c. 3·2 Sugar . 3·0	6·1	1 : 5·08	1·5	0·645	2·684	3·329
Succulent Vegetables	85·8	1·3	Starch, &c. 12·2	12·2	1 : 9·4	0·7	0·7	5·417	6·117
Arrowroot	12·0	1·0	Starch . 86·7	86·7	1 : 86·7	0·3	0·538	38·49	39·03
Sago	14·8	1·5	„ . 83·5	83·5	1 : 55·6	0·2	0·807	37·074	37·881
Tapioca	13·0	2·0	„ . 84·7	84·7	1 : 42·3	0·3	1·076	37·607	38·683
Sugar	5·0	0·0	Sugar . 95	91·5	1 : ∞	0·0	0·0	39·99	39·99
Butter	13·0	1·0	Fat . . 86	206	1 : 206	0·0	0·538	66·22	66·758
Suet	13·0	0·0	„ . . 87	208	1 : ∞	0·0	0·000	66·99	66·99
Lard	8·0	2·0	„ . . 90	216	1 : 108	0·0	1·076	69·3	70·376

Note.—In this Table 10 parts fat are considered equal to 24 parts of starch. Under the heading "Starch, &c.," cellulose and gum are included. The amount of carbon is taken as follows:

Flesh-formers	53·8 per cent. Carbon.	Sugar of Milk	40·0 per cent. Carbon.
Starch	44·44 „	Fat	77·0 „
Sugar (Cane)	42·1 „		

birthright. In this class of highly nutritious food we find the flesh-formers and heat-givers standing in the proportion of 1 to $2\frac{1}{2}$. This proportion is, in fact, too small for healthy nutrition, and we find experience teaching us to augment the proportion of heat-givers to flesh-formers, so we mix potatoes with peas in making pea soup, and we take fat bacon with our beans.

The third group of food in the table comprises the cereals or corn crops, and bread made from flour; all of these contain flesh-formers in marked quantity, though less in amount than in the two preceding groups. Rice stands lowest in this group, having 6 parts in the 100 of flesh-formers, while oat-meal stands highest, having 16 parts. All of them abound in starch, and contain fat in quantity varying from 1 to 7 per cent. Omitting rice, in which the proportion of flesh-formers to heat-givers is as 1 to 12, the other members of the group range between 1 to 5 and 1 to 8. Bread, which can support life by itself, though not with vigour and activity, has its flesh-formers and heat-givers in the ratio of 1 of the first to $5\frac{3}{4}$ of the latter.

We now come to the group which we ordinarily class in culinary language as "vegetables," including potatoes, carrots, parsnips, turnips, and succulent vegetables. They all contain so much water (from 75 to 85 per cent.) that their nutritious value in 100 parts is low as compared with the preceding group. None of them contain as much as $1\frac{1}{2}$ oz. of flesh-formers in 100 oz. of the vegetable. We now find, in addition to starch and fat, a notable quantity of sugar—in the case of carrots amounting to 5 per cent. Their mineral matter is rich in alkaline salts, which possibly explains their value in scurvy. Potatoes form an eminent heat-giving food, for the proportion between the flesh-formers and heat-givers is as 1 to 16, whilst in the other vegetables in this group the proportion is as 1 to 8. They are, therefore, all justly considered as accessory food, useful as additions to more nitrogenous foods, but not economical as a source of supply of the latter.

As we descend in the table we come to arrowroot and similar bodies, such as sago and tapioca, and sugar. These now cease to be considered as, in many respects, entitled to be classed as food. They afford, it is true, one very important ingredient of food—fuel for the support of animal heat—but when of the best quality may be entirely free from flesh-formers, or from mineral material fitted for the supply of the system. They can never be used for nutrition proper, having nothing in them to build up the structure of the body, but

they may be highly useful as additions to a diet, by increasing the quantity of heat-givers when these are deficient.

The same remarks apply to such substances as butter, suet, and lard. Like all fats, they may form powerful accessories to nutritious food, but they cannot by themselves nourish the body, having no nitrogen in their composition, or, at all events, only that which comes from their accidental mixture with fleshy matter. They are rich in carbon, which in their dry state amounts to from 77 to 79 per cent., and in their commercial state to from 67 to 70 per cent. They also contain free hydrogen, so that 100 parts of them mount in a starch-equivalent to from 206 to 216 parts.

Some surprise may be experienced that the table contains no account of the stimulating and alcoholic beverages, but it is more convenient to consider them separately. There must be some remarkable use in tea, or it would not at the present time be used by 500 millions of men, or by about one half of the human race. In the United Kingdom not far from 3 lbs. of tea are annually used by each person—man, woman, and child included; while coffee, although not so much taken by us, requires an annual supply of 600 millions of pounds to satisfy the consumption of the world. There are three stimulating substances—tea, coffee, and Paraguay tea—which have no relationship as regards the plants which furnish them, or as to the countries in which they were indigenous, but all of them are taken as stimulating beverages; a fourth substance, the Guarana tea, is of a like character. Now, when chemists examine these four substances, an alkaloid called *Theine* is found in them all. This alkaloid has very peculiar physiological properties. In small quantities it appears to arrest the too rapid waste of the tissues. When a person has been labouring, the organs of the body necessarily waste, but the transformation begun is apt to continue when the demand for labour has ceased, and theine has the property of stopping this change. But when taken in too large quantities, as frequently happens in the present evil fashion of taking tea at all hours of the day, it acts on the nervous system, producing irritability of temper, and acting unfavorably on the assimilation of food. When this nervous irritability exists, by a change from tea to cocoa (in which an alkaloid closely analogous to theine, called theobromine, exists) equanimity of temper is generally restored. Both tea and coffee contain narcotic and intoxicating oils in small quantity; the aroma and quality much depend upon these oils. Tea and coffee in their solid state contain abundance of casein, the important flesh-forming ingredient of milk;

but this does not find its way into the infusion, unless, indeed, when poor people put soda into the water, which, thus rendered alkaline, may dissolve some of it. It is to the theine that the chief action is due; 100 oz. of tea contain about 3 oz. of theine, and 100 oz. of coffee about $1\frac{3}{4}$ oz. of the same alkaloid. The quantity of carbon added to a dietary by an infusion of either tea or coffee is too insignificant to be considered. Cocoa abounds in fat—in fact, one half, or 50 per cent., consists of a peculiar butter, while there is also about 2 per cent. of its own alkaloid, analogous to but milder in its effects than theine. In the present state of chemistry we cannot follow the transformations of these alkaloids in the body, or explain how they produce their effects.

The alcoholic beverages so commonly used by man act, when taken in small quantities, in a manner similar to tea, but in larger quantities they operate injuriously by exciting the circulation and producing evils of the same kind as an excessive quantity of food. Beer is the cheapest form in which alcohol can be taken; one ounce of alcohol in beer costs twopence, in spirits it costs fourpence, and in cheap wines eighteen pence. In making beer the grain undergoes in part the same changes that it experiences when taken as food by an animal. The malting of barley converts its starch into gum, then into sugar, which in a subsequent change is transformed by yeast into alcohol and carbonic acid. The substance in the malting which has this transforming effect upon the starch is called *Diastase;* and a similar body, though under a different name, exists in saliva. Accordingly we find Chica beer made in South America by a process less pleasant than malting. Old women chew maize and spit it into jars, when it passes into alcohol, the starch having been changed into sugar by the saliva of the old crones. In the South Sea Islands Cava beer was made in a like way from the seeds of the long pepper, which was chewed by young women with good teeth, and after being spat into jars was fermented for the king and nobles.

The transformation of all starchy food into sugar is illustrated by these primitive brewers. The animal grinds the food, and by the saliva converts the insoluble starch into soluble sugar, while the changes of such portions as escape the action of this fluid are completed by the pancreatic juice. The stomach has mainly to do with the flesh-formers, and effects their solution, although it commences also the breaking up of the fats. But it is not our present purpose to follow the food through the body, or to show how it is assimilated. We propose, however, in a sub-

sequent paper to apply our knowledge of the composition of food to an examination of the amount which should be taken by persons under varying circumstances of age, sex, and employment.

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THE CATTLE PLAGUE.*

By Howard Reed.

When the Royal Agricultural Society met last year upon the pleasant heights overlooking Plymouth Sound no dread of coming calamity disturbed the harmony of the occasion.† The pedigree stock were committed to the railway authorities with no more than the usual apprehensions for their safety, and after their customary retention were again returned to their pastures to retire with their honours, or be further prepared for subsequent exhibition.

But the propositions of man do not always accord with the dispositions of God.

Had the stock-masters seen the letters passing at this time between the Home Office and the Royal Veterinary College, and connected the information they contained concerning the appearance of a most unwelcome visitor with records of the past which lay entombed in the British Museum Library, or in musty parish registers, they would have looked with less complacency upon the future. The cloud, then no bigger than a man's hand, has since overspread the heaven of his hope, and cast a gloomy shade over the farm homesteads of Great Britain. Returning from this meeting the exhibiter could scarcely have recrossed the threshold of his home before the Lords in Council issued their first Order, which announced the "recent appearance" of "a contagious or infectious disorder of uncertain nature, prevailing within the metropolis, and in the neighbourhood," and advised measures to be immediately taken "to prevent such disorder from spreading." Within six months from

* The time has not yet arrived for the treatment of this subject in its entirety. The progress and effects of the disease will be better discussed some time hence. The writer has only ventured upon a sort of interim report, which has been prepared at short notice.

† It is now asserted by Professor Simonds that during the very week of the show a cow was being treated in Plymouth for rinderpest, though the farrier in attendance did not then know what he had to deal with.

that date anxiety has deepened into despair. Thirty-six out of forty English counties are infected; in Scotland sixteen out of twenty-seven; in Wales two out of twelve. The depressing totals of the bills of mortality have doubled from month to month, and in the face of so great a calamity Parliament deemed it necessary to suspend its ordinary business that it might defend and arm the country.

The rinderpest was detected in its first appearance towards the end of June in two metropolitan cowhouses by Professor Simonds, and reported to the Home Office on the 10th of July. Having formed a previous acquaintance with this murrain in its haunts and special breeding grounds,* Mr. Simonds was well aware of the impending danger, and accordingly sounded an alarm, of which, at first, but faint echoes were heard through the country. This timely proceeding gained for him the title of "Alarmist" with those who were ignorant of domestic events from 1745 to 1757, and unhappily they were many; but the event has proved that his fears were founded on correct knowledge of the subtle and deadly nature of this fever. Before the close of July Professor Gamgee, in addressing a metropolitan meeting of the troubled cowkeepers, announced that 2000 cows already had perished, though the disease was but a month old. Throughout August the newspapers were pretty fully employed in chronicling its progress through the provinces, for it appeared with a simultaneousness that quite confirmed the views adopted by some superficial advocates of "spontaneous generation." Beyond Middlesex we first heard of it in Surrey, in the Essex Marshes, in Sussex, at Portsmouth and Plymouth, at Aylesbury, in Norfolk, Suffolk, Warwickshire, Kent and North Lancashire, at Leicester, Peterborough and Nottingham, at Edinburgh and Leith. Rayed out from the Metropolitan Market it multiplied its centres of operation, and wrought with a rapidity known only to itself. The veterinary schools set to work to observe and advise. They made *post-mortem* examinations, did their best to establish the identity of the murrain, wherever it appeared, with the rinderpest of Russia, and when they had done so agreed that "to slaughter and to stamp out" was the only prescription of any avail. Town and country meetings were held in the various districts where the disease appeared, to concert measures of defence. From these sprang Mutual Insurance

* Mr. Simonds was deputed by the three Agricultural Societies of England, reland, and Scotland, to visit Russia and report upon the "Steppe Murrain," which he did in 1856, his report appearing in this Journal, vol. xviii, Part ii.

Associations and Medical Commissioners, and other organized operations, the first provincial examples of which were those of Norwich and Aylesbury. Under the pressure of public opinion, medical testimony, and the exigences of the case, the Privy Council issued no less than five distinct Orders during the month, the last of which empowered justices to appoint inspectors authorised "to seize and slaughter, or cause to be slaughtered, any animal labouring under such diseases."

But, in spite of this Order, the pest raged with redoubled violence throughout September. The weather was dry, and the atmosphere in a favorable state for the absorption and dispersion of the septic germs. Unfortunately, too, the Order in certain cases increased the mischief it was intended to subdue; for the inspectors being men often singularly unfit for the office, yet unwearied in their efforts to perform the despotic duties attached to it, carried the disease wherever they went, and left it where they did not find it. The fact that men were to submit to the slaughter of their cattle without receiving compensation did much to spread the infection, for where disease appeared the owner felt no compunction about clearing off the greater portion of his stock before hoisting the black flag. Gathering fresh force from every fresh centre, the plague attacked the herds of the West Riding of Yorkshire, cleared 30 of the 200 cowhouses of Edinburgh, increased its hold of Devon, decimated the cattle grazing in the Isle of Ely, leaped upon Derby and Dorset, placed its clammy hand upon Worcestershire, fastened upon the counties of Cumberland, Northumberland, and South Wales, and, wherever it had previously gained a vantage ground, improved it. Its ravages amongst the London cowhouses was fearful; it virtually swept and left them tenantless. An instance of no exceptional character may be welcome by way of illustration. The dairy of Mrs. Nicholls consisted of 116 shorthorn cows, which cost £2530: 100 cows sold at a low figure, realising £536, and sixteen were carted away and buried; medical advice cost £48 17s.; total loss, £2042.

During the same period the Council consolidated the previous Orders, and prohibited the importation of hides and skins, of sheep, lambs, and all cattle, into Ireland, forbade the entrance of cattle into the Metropolitan Market, except for the purposes of being slaughtered, empowered magistrates in petty sessions to stop fairs and markets, and published papers containing suggestions on the part of Professor

Simonds, and a memorandum on the principles and practice of disinfection by Dr. Thudicum.

At the close of September the Privy Council, finding its efforts to stay the plague unavailing, solicited the Queen to issue a Royal Commission to investigate the origin and nature of the disease, and to frame regulations to check its progress.

Throughout October, during the laborious daily sittings of this Commission,* the plague continued to extend. By the 14th of the month it had appeared in twenty-nine counties in England, two in Wales, and sixteen in Scotland. The first return prepared by the veterinary department of the Privy Council, under the headship of Professor Simonds, showed a gross total of 17,673 animals attacked, of which 848 had recovered, and about 1200 were in a doubtful state; the cases of attack in the second, third, and fourth week numbering respectively 1054, 1729, and 1837. The doctors and the nostrum-mongers were, of course, busy. Multitudes had a specific, but no one held a cure. The red-hot iron cross with which the cattle were branded on the head in the year 376 seemed, according to Cardinal Baronius, a far more potent remedy than medical science has been able to offer in 1866. The practitioners, being ill-acquainted with the nature of the disease—and thereby obliged to accept the vague name it now bears—treated it from very various points of view. The results, however, were dismally uniform. Some slight improvement in the rate of recovery was observed, but this has been disputed by those who carefully analysed the returns. Many were the hopes built upon the approach of winter. The cholera bows to a fall of the barometric column. But the chilly autumnal nights destroyed the hope before the winter came. Cold rains and bleak winds imparted a malignant zest to the virus, and the rate of mortality rose correspondingly.

The Report of the Commission, when it appeared in November, brought no relief. It rather increased the alarm, for the evidence on which it was founded confirmed the gloomiest forebodings that had reached the public eye, and pointed out a remedy in slaughter and absolute stoppage of cattle traffic,

* The names of Her Majesty's Commissioners are as follow:—Earl Spencer, K.G.; Lord Cranborne, M.P.; Right Hon. Robert Lowe, M.P.; Lyon Playfair, C.B.; C. S. Read, M.P.; R. Quain, M.D.; Bence Jones, M.D; E. A. Parkes, M.D.; Thomas Wormald, President of College of Surgeons; Robert Ceely, Surgeon; Charles Spooner, Principal of Veterinary College; and J. R. M'Clean, President of Institution of Civil Engineers.

which the Government, influenced by the milder recommendation of the agricultural section of that body, did not feel warranted to enforce before the meeting of Parliament. They preferred to issue another Order, revoking powers previously given to inspectors, and stimulating local action by conferring more extensive powers on various local authorities. Unhappily this step induced an amount of confusion of which the plague took the most ample advantage; for throughout the months of November, December, and January, our loss doubled every four weeks, and at the close of February it amounted to nearly 12,000 a week.

The following table presents a clear view of the extent of the calamity.

Down to	Total Number Attacked.	Total Number Died.	Total Number Killed.
October 28 . .	17,673	7,912	6,866
November 18 . .	27,432	12,680	8,998
„ 25 . .	33,983	16,384	10,061
December 9 . .	47,199	24,513	11,554
„ 16 . .	52,386	29,700	12,380
„ 30 . .	73,549	41,491	13,931
January 6 . .	82,057	47,192	8,268
„ 13 . .	94,256	55,391	10,008
„ 20 . .	107,098	63,905	11,831
„ 27 . .	120,740	73,750	14,162
February 9 . .	132,183	81,386	17,368
„ 17 . .	148,590	92,853	18,247
„ 26 . .	166,379	105,497	19,227
March 9 . .	187,059	117,664	26,135

These figures, however, are merely approximate. They represent the facts that came only under the immediate cognizance of the veterinary department of the Privy Council. In hundreds of instances the order to give notice of infection was evaded, and cases occurred of which the inspectors were ignorant. Thousands of animals were and continued to be slaughtered to be out of the way of attack. Wherever the pest has been announced the district has been immediately cleared of its fat and three-parts fat stock, which have been forced upon a clogged market to fetch what they would. Similarly, as the distance has diminished between the diseased and the healthy, the two-year-old cattle, the yearlings, and the calves, have followed to the same bourne, and left the farmer to wonder by what means the next year's crop of grass and roots are to be consumed. This is a loss of which these

tables give not the slightest indication, and I scarcely know, so far as the intrinsic value of the cattle is concerned, which loss is the greatest, that which appears and that which does not appear.*

It forms no part of my intention, however, to deal either with the history or the consequences that are likely to attend upon this disease, but to confine myself to the disease itself and its treatment, adding a few words about the local organizations for defence and relief. This undertaking involves great difficulties; the range of inquiry is necessarily extensive, the sources of information are perplexingly numerous—the lights cast from one side and the other conflict and confuse—the ground is broken, and to a certain degree untrodden. When so little is known of the object of inquiry, and so much remains to be ascertained, anything like dogmatic assertion will be clearly out of place. I shall simply endeavour to give a clear view of what we already know, for the sake, not only of the present inquirer, but also for him who years hence may find ready access to the pages of this Journal, when Orders in Council, Acts of Parliament, and the ephemeral publications of the day, are thrust into a corner and buried beneath the dust.

The great Sydenham, in his celebrated work upon epidemics, advises that the natural history of a new disease should be thoroughly studied and ascertained before any attempt be made to prescribe treatment. This investigation, he says, should be pursued under every possible variety of circumstances, until it is classed like the plant, the fossil, and the crystal, or allowed to take the lead of a new line. Before the practical application of this advice the "plagues," "black-deaths," and "grievous pests" of former times, have either vanished or assumed a milder form. We entertain but little fear of the plague now, smallpox is cheated of its victims by a prophylactic artifice, and cholera will probably not long retain the secret of its deadly strength.

The same results undoubtedly would have attended the treatment of domesticated animals had those who attend them been possessed of equal advantages and skill. Every effort to substitute for the humble farrier men well trained in the principles of medicine is of more recent date than the formation of the Royal Agricultural Society, and even now, as Mr. Holland's statistics show us, there are only 1018 mem-

* Mr. Herbert estimates that by the end of January upwards of 6000 store cattle had been thus sacrificed in Lincolnshire alone; whereas the 'Sixteenth Return of Cattle Plague Inquiry' (up to Feb. 17th) states the total number attacked in that county to be 5954.

bers of the Royal College in practice in the United Kingdom, whilst the number of those who assume the title of veterinary surgeon, without the right, is 1244, and of those practising as farriers 1109.

It must be confessed that the opportunities afforded to the practitioners for the study of disease are of a very limited character. Except in the case of horses, the poleaxe or the knife are swiftly resorted to when sickness does not yield to a few simple remedies, the observation of morbid appearances being left to the butcher. This is one explanation of the fact that apparently we know no better how to meet the plague now ravaging the country than we did 100 years ago.

Happily, however, the cry for indiscriminate slaughter has not prevented inquiries of a very extensive and important nature being made. The labours of the Medical Committees of London, Edinburgh, and Norwich, the experiments that have been carried on under the observations of Professors Simonds, Spooner, Dick, and Gamgee, as well as to those more private questionings of nature conducted by able men in both branches of the medical profession, have cast much light upon certain paths that will probably lead to the discovery of preventive or curative measures; with the published reports of their proceedings, and the memoirs and letters that have appeared from many of the private sources referred to, it will be my duty to make the readers of this Journal acquainted.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, HELD JUNE 25TH, 1866.

PRESENT:—Professors Varnell and Gamgee; Messrs. J. C. Broad, Field, Goodwin, Gowing, Greaves, Harpley, Harrison, Moon, Robinson, Thacker, Wilkinson, Withers, and the Secretary.

On the motion of *Mr. Wilkinson*, seconded by *Mr. J. C. Broad*, Mr. William Thacker, Vice-President, took the chair.

The minutes of the preceding meeting were read and confirmed.

A letter was read from the President, enclosing letters from Professor McCall, which were also read, and an extract from the *Scotsman* of June 14th, under the head of "Memorial to Professor Dick."

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Broad*—

"That the letters now read be entered on the minutes."—Carried.

The Secretary next read a letter dated June 18th, 1866, which had been received from E. Holland, Esq., M.P., on the subject of the Veterinary Medical Bill, having special reference to a proposed alteration in Clause 3, by Mr. M'Laren.

The Parliamentary Committee reported that they recommend to the Council that Messrs. Holland and Newdegate be requested to act as they think best, under existing circumstances, with a view that the powers granted by the Royal Charter to the veterinary profession be not injuriously affected.

After a considerable discussion, it was moved by *Professor Varnell,* and seconded by *Mr. Greaves*—

"That a letter be written to Mr. Holland to the effect that the Bill be proceeded with in its present form."—Carried.

A further discussion ensued on the subject of a charter being granted for Scotland, and the proposals which had been made by the Council for the admission of those gentlemen holding the Highland and Agricultural Society's certificate into the body corporate.

It was moved by *Mr. Broad,* and seconded by *Mr. Wilkinson*—

"That the Parliamentary Committee should be instructed to consider what steps should be taken with a view to opposing the attempts to obtain a special charter for Scotland."—Carried.

The subject of registration having been introduced, it was deemed advisable by the Council that the publication of a new Register should be deferred for the present.

By order of the Council,

W. H. Coates, *Secretary.*

QUARTERLY MEETING OF THE COUNCIL, held July 4th, 1866.

Present:—The President; Professor Gamgee; Messrs. J. C. Broad, Field, Harrison, Moon, Thacker, Wilkinson, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

Previous to signing the minutes, it was moved by *Mr. Wilkinson,* and seconded by *Mr. J. C. Broad*—

"That the omission at the previous meeting of the letter dated June 18th, 1866, which had been received from E. Holland, Esq., M.P., on the subject of a proposed amendment by Mr. McLaren, M.P., in Clause 3 of the Veterinary Medical Bill, and also the reply to the same, be entered on the minutes."—Carried.

A letter was then read dated July 2nd, 1866, received from E. Holland, Esq., M.P., to the following effect:—"That the Bill was postponed in consequence of the House not meeting for business; and Mr. Holland being obliged to leave town, the Bill was placed for the present in charge of Mr. Newdegate."

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Field*—

"That the letter now read be also entered on the minutes."—Carried.

A letter was read from Professor Gamgee in which he begged to present to the Museum two registering thermometers, made by Mr. Casella; also a little work on 'Stable Management,' for the Library. A new edition of 'Youatt on the Horse,' by Mr. Walker Watson, of Rugby, was presented by that gentleman, all of which were laid upon the table.

It was moved by *Mr. Broad,* and seconded by *Mr. Harrison*—

"That a vote of thanks be given to those gentlemen for their kind presentations."—Carried.

A letter was then read which had been received from Mr. Cheverton, of Tunbridge Wells, a chemist and practising veterinary surgeon, stating his desire of becoming a candidate for the diploma of the Royal College of Veterinary Surgeons, and asking the Council to make a special case for him, in order that he might be exonerated from attending a sessional course of study, and expressing his willingness to write a thesis on any given subject in lieu of the ordinary examination.

The Secretary was desired to inform Mr. Cheverton that there was no examination by thesis recognised, it being contrary to the regulations of the Charter and By-laws of the College.

The Secretary reported that at the first meeting of the Court of Examiners, held April 24th, on the motion being made for the election of a chairman to fill the place of the

late Professor Brande, Dr. A. S. Taylor was declared to be unanimously elected.

At the several meetings of the Court of Examiners, held in London, forty members were admitted from the Royal Veterinary College, and ten rejected; six members from the new Edinburgh College, and three rejected.

That twenty-one members were admitted from the veterinary colleges, Edinburgh and Glasgow, and one rejected. Amongst the number were included fifteen candidates holding the Highland and Agricultural Society's certificate, four of whom had been in practice ten, twelve, thirteen, and eighteen years respectively, were admitted members of the body corporate. The names of the members admitted were read, those who were rejected, and also the names of the examiners and *ex-officio* members who were present.

The Registrar reported the following deaths, viz., Mr. Ephraim Alfred Friend, of Liverpool, his diploma dated April 21st, 1820; Mr. John Bell Henderson, of London, diploma dated May 10th, 1854; and Mr. Paul Anthony, of Tickhill, Yorkshire, diploma dated May 11th, 1853.

The attention of the Council was directed to a reference which had been made at the preceding meeting for the publication of a new Register. After some discussion, it was moved by *Professor Gamgee*, and seconded by *Mr. Broad*—

"That a new Register be published, with the omission of the War Office Warrant, and that a proof be submitted to the Registration Committee."—Carried.

The report from the Finance Committee and the quarterly balance-sheet of the Treasurer's Account were submitted. The current expenses for the quarter amounted to £103 6*s*. 10*d*., which the Committee recommended should be discharged.

It was moved by *Mr. Broad*, and seconded by *Professor Gamgee*—

"That the Report and the Treasurer's quarterly balance-sheet be received and adopted."

Cheques were ordered to be drawn for the current expenses.

The consideration of Professor Gamgee's motion for the alteration of By-law No. 20, which had been duly suspended, was then read, viz., that instead of "Twelve of the examiners shall be selected by members of the College, and eight non-members eminent for knowledge of medical science and chemistry," the following words shall be substituted:—"Twenty examiners shall be selected, and of these not less than twelve shall be members of the College,

and the remaining eight may be non-members eminent for their knowledge of medical science or chemistry."

It was then moved by *Professor Gamgee,* and seconded by *Mr. Field*—

"That the By-law as now read be altered in the form proposed."

After some discussion, it was deemed advisable that this subject should be postponed, in order that a larger meeting might be in attendance to discuss the question.

At the conclusion of the meeting some observations were made in reference to the reports which had been furnished to the *Veterinarian.* It was suggested that a very concise abstract from the reports should be made and revised by a committee, as had been done on former occasions, when a reporter was similarly engaged.

By order of the Council,

W. H. Coates, *Secretary.*

WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

The first annual meeting of the members of this Association was held at Amery's Hotel, Bath, on Thursday, the 19th of July, pursuant to circular.

Mr. Raddall, President, occupied the chair.

Messrs. T. D. Broad, of Bath, and G. Bodington, of Cardiff, two of the Vice-Presidents; Mr. Dring, and Mr. J. M. Broad, both of Bath; Mr. Barrell, of Keynsham, and R. H. Dyer, Hon. Sec. and Treasurer, of Torquay, were present.

The under-named members of the body corporate attended the meeting, and were elected members of the Association, viz., Mr. Aubrey, Salisbury; Mr. Scott, Chippenham; Mr. James, Corsham; and Mr. Bibby, Calne.

Mr. Coleman, a student, and the brother of the President, also attended the meeting.

Mr. Whitemoe, of Langport, Somerset, was proposed by *Mr. Bodington,* and elected a member.

The minutes of the last meeting were read and confirmed.

The Secretary presented his accounts, which showed a balance in hand of between eight and nine pounds, although some members are still in arrears, not having paid their subscriptions since their election, which it is hoped they will not fail doing soon, as the by-law of the Association is rather stringent upon members so acting.

Considering the youthfulness of the Society, it must be gratifying

to them that twenty-seven names are on the list as subscribers, and six honorary associates.

The election of officers for the ensuing year then took place, when Mr. Bodington was elected President; Messrs. Barrell, Dring, and J. M. Broad, Vice-Presidents; and R. H. Dyer was elected Hon. Secretary and Treasurer. The statement should not be omitted that the Secretary was anxious to give up his post to some other member of the Society, but this could not be entertained, it being the unanimous wish that he continue to act for the Association another year at least.

Mr. T. D. Broad, read his paper on "Seedy Toe," which was discussed with animation, and every one seemed pleased with the result of the meeting.

It was decided to hold the next quarterly meeting on Wednesday, 17th October, at Cardiff. Mr. Bodington, the President, gave a very pressing invitation to all those who intend being present at the coming meeting to be his guests for the day, and it is hoped so kind an act will be appreciated as it deserves to be, and accepted.

Several members of the Association took an opportunity of giving utterance to their feelings expressive of the warm interest taken by them in these associations, believing they will do more for the good of the profession, as well as the public, than all the regulations that the Houses of Parliament are likely to accomplish, at any rate in the present generation.

Dinner being announced at five o'clock, all the members and their friends partook of the same at the above hotel, thus constituting a friendly reunion, cemented by common interests. Owing to the distance some of them had to travel, they were obliged to leave at 7.30, so as to be in time for the down train.

[Mr. Broad's Essay, with Mr. Greaves' observations, will appear in the next number of the Journal.— EDITORS.]

THE MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

THE opening meeting of this Association was held at the Midland Hotel, Derby, on Tuesday, July 3rd. The following gentlemen were present:—Messrs. C. Taylor (President), G. Poyser, T. Greaves, W. A. Cartwright, E. Bailey, sen., E. Bailey, jun., T. Newton, H. King, J. Martin, J. M. Leech, B. Kettle, W. Borry, W. P. Toll, W. Cope, J. Weston, J. Webberley, J. Rushton, W. C. Ison, H. Flower, G. Rossell, A. Statham, J. Carless, — Cowlishaw, — Dolman, M.R.C.S., J. C. Nixon, and the Secretary.

The preliminary business of the meeting having been concluded, the President delivered the subjoined address:

GENTLEMEN,—Having done me the honour to elect me President of the Midland Counties Veterinary Medical Association, it devolves upon me to address you on this our first annual meeting. I could have wished the onorous duties connected therewith had fallen to the lot of some one more competent to discharge them with efficiency. We are following in the wake of other similar societies, as the Lancashire, Yorkshire, Liverpool, West of England, and others which are well known to you, and, though last, I trust we may not be least in our exertions to forward the advance of veterinary art and science. I beg to congratulate you, gentlemen, on the occasion of this our first meeting, and am glad to see so many friends present. I think it will be admitted by all here that these associations are well calculated to improve the status of our profession, and that at our quarterly meetings subjects being brought before us by essays read upon some most important diseases—as the present fatal cattle plague, or rinderpest, or other subjects, &c.—and afterwards being open to discussion, will elicit, no doubt, much valuable information, the interchange of our different experiences being candidly brought forward, must tend to our onward progress. I think we may look upon the institution of these societies as an important era in the history of our profession, leading us to keep pace with this age of wonderful scientific discoveries. We have recently had brought before us, amongst others, Dr. Richardson's valuable discovery of local anæsthesia as a substitute for the inhalation of chloroform in surgical operations, there being in this process little or no risk of constitutional disturbance. The Messrs. Mavor, veterinary surgeons, London, have been recently using this method in four surgical cases on the horse with the greatest success, the animals suffering no pain during the operation. The anæsthesia is produced within one or two minutes. I think that these meetings will, no doubt, prove the means of adding to that harmony and concord which it is desirable shall exist amongst us. Most of you are aware that I have been many years in the profession—upwards of fifty—and, on taking a retrospective view of my early pupilage, it must be admitted that I had not the advantages which you possess at the present day, there being then at the London Veterinary College only the late Professors Coleman and Sewell. Mr. Coleman was educated as a surgeon. I have always considered this a good stepping-stone into our profession. He was the fellow-pupil and intimate friend of the late Sir Astley Cooper; he became singularly distinguished in the particular department of professional study to which he devoted himself, namely, physiology; and he may also be ranked as the man who first raised veterinary surgery to the character of a science in this country. His work on respiration and suspended animation is well known, and gained for him the medal of the Humane Society. His scientific views and high character made him thought worthy of being elected a Fellow of the Royal Society and of several other scientific associations.

Whatever is a man's pursuit in life, it is knowledge and moral character which give to him his real rank and position, and in proportion as he possesses these he will be respected. I always found Professor Coleman accessible and willing to impart information upon all subjects. Mr. Sewell also possessed similar good qualities. He was anatomical demonstrator and professor of pathology. To him we are indebted for bringing forward the division of the metacarpal nerves for naviculartbritis, or chronic lameness in horses' feet. I have known, in my own practice, many successful cases, horses being rendered by this operation serviceably sound which were incurable by any other means. I think we may term this the *dernier ressort* of our art. Of course, gentlemen, in the present day you have, and have had for some years past, the advantage of a professor in each department of art and science, each in his sphere distinguished for eminent ability. The names of Principal Professor Spooner, Professors Varnell, Simonds, Tuson, and Pritchard, are well known to you. Our profession has had held out to it, by Government, as encouragements, that its members be entitled to hold rank and pay in the army as commissioned officers. I think this may be considered a great boon, raising our position before the public. We have also, in addition, the patronage of the nobility, clergy, gentry, and leading agriculturists of the country. I think these combined encouragements should stimulate us to go on and do our best to still further raise the status of our useful and noble profession. My first object in entering as a pupil at the London College was, on being duly qualified, to obtain an appointment in the army; but being disappointed in this, I embarked in private practice, which step I have had no reason to repent taking. Shortly after commencing I had an offer of partnership from the late Mr. Lacey, who was well known in the midland counties as a sporting man and a first-class rider across country, and a fortunate breeder of thoroughbred horses, amongst several others having bred the celebrated horse Birmingham, which won the St. Leger in the year 1830. I have adverted in the early part of this address to the fact of surgery being a good stepping-stone to our profession, which I can confirm by my own experience, as at this period I was kindly taken by the hand by the late Mr. Attenburrow, the eminent surgeon for fifty years to our General Hospital, Nottingham, and had an opportunity of seeing almost all the capital operations in the human subject—as lithotomy, amputation, and ligature of some of the principal arteries, &c. This I considered a great advantage, and I found it very useful to me in my after practice. I would recommend future pupils to adopt a similar course, if it lies in their power. I have myself twice performed the operation of lithotomy in the horse, assisted by our present eminent surgeon to the hospital, Mr. William Wright, of Nottingham. I have also twice applied ligature to the jugular vein, in cases of extreme hæmorrhage; the four cases were attended with success. I wish to make a few observations on the proposed Veterinary and Medical Bill (which is now before Parliament), the object of which appears to be to protect the public and

the profession from persons who falsely call themselves veterinary surgeons, who have not received either a scholastic or professional education. I think we ought in these cases to have protection, having ourselves given our time and been at the expense of acquiring the necessary qualifications. It is much to be regretted that the penalty which is now sought for was not granted by the Royal Charter in 1845, as we should not now be subject to the encroachments complained of. We stand before the public as a recognised profession, but have not the necessary protection. Doubtless this was an oversight at the time the Royal Charter was granted, no penalty being attached to an infringement of its provisions. There is also another matter I would say a few words upon. Ours being a recognised profession, I think, entitles us to the same immunities as possessed by the practitioners of the human subject—that is, that we should not be liable to be called upon to serve upon juries, or to act as special constables, or in other official capacities, these being specially inconvenient to all classes of medical practitioners. I myself have been called upon to act as special constable in defence of our post-office during one of those unfortunately too celebrated Nottingham riots, and I think our time and talent would be more advantageously employed for the benefit of the public in discharging our duties, in attending to cases of sudden illness or accident to horses or cattle that may occur in each of our individual spheres, than in occupying the position I have stated. It is to be hoped that Government ere long will place us in a right position as to these immunities. Taking a comparative view of the two professions, I think you will agree with me ours requires as much if not more cultivated ability, as we cannot ask our dumb patients any questions, or expect any answers from them, but we have intuitively to form our diagnosis as to the seat and degree of disease, draw our conclusions as to the prognosis, and carry out our pathological treatment. Gentlemen, some censures and reflections have been cast upon us as to our not having been enabled to cure animals suffering under the present fatal cattle disease; these must have emanated from persons not conversant with medical science. I think it is an admitted fact, that this is a disease foreign to our climate, not spontaneous in its origin, but caused by a specific organic poison floating in the atmosphere, and imported from abroad by cattle brought over to this country. It is well known that there are several specific incurable diseases in the human subject similar in their zymotic character to the present cattle disease—as small-pox, cholera, hydrophobia, &c. The former of these can be palliated, and the patient carried through them; but there is at present no known specific remedy. In remarking upon these morbid poisons, it may not be uninteresting to you to relate an accident that occurred to myself some time ago. I was severely bitten on the lower part of the arm by a horse labouring under hydrophobia. I was not aware at the time that the horse had, six weeks previously, been bitten by a mad dog; but I was so impressed with the marked character of the disease, that I immediately adopted the best preven-

tive means that crossed my mind—as suction of the wounds by myself, free ablution with warm water. I then applied to a surgeon and had the parts excised, and a few days afterwards caustic was freely applied. The horse died raging mad in the course of a few hours. I made a *post-mortem* examination, and found the fauces, the epiglottis, and mucous membranes of the glottis, in a high state of inflammation, and of a dark livid colour, highly characteristic of this dreadful complaint. My advice has occasionally been sought in these cases, where an animal or the human subject has been bitten by a rabid dog: I have recommended, with success, free ablution with warm water, suction of the wound by the mouth or cupping glasses, dilating the part with a silver probe, and freely applying caustic. I prefer the *potassa fusa* washed to a point, the shape of a dog's tooth, introduced to the bottom of the wound, giving it two or three turns round, and afterwards applying poultices for a few days. One of our eminent surgeons, Mr. John Higgingbottom, strongly recommends as a caustic in these cases the nitrate of silver, but I prefer the former. I would now suggest that some one here present will signify his intention to read a paper at our next quarterly meeting upon some important subject; and if it is named to-day each member will come prepared to give us his opinion and experience, which I feel assured will tend to the onward advance of veterinary art and science. I believe that the veterinary profession has by these meetings elevated itself to a position never before attained in this country, and that they operate to encourage professional unity—and "Unity is strength;" and I trust that these and other associations will extend through the length and breadth of the land, proving their high practical value, not only to ourselves, but to the public in general. In conclusion, gentlemen, allow me to thank you for your kind attention, and to wish you all health and professional prosperity.

Subsequently to the reading of the foregoing address, the members and their friends partook of an excellent dinner, which was followed by the delivery of numerous speeches, an account of which want of space compels us to omit.

The proceedings throughout were of a highly gratifying character. The company, most of whom came from a distance, separated at an early hour.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF COMMONS.

July 23rd.

Veterinary Surgeons Bill.

On the order for going into committee,

Mr. Newdegate explained the objects of this bill, by which it was proposed that persons practising as veterinary surgeons should

obtain diplomas from the Royal Veterinary College in London. It was not his intention, however, to press the bill now, and he would leave it in the hands of the Government.

Mr. Corry said he had received representations from both sides respecting this bill, and the discrepancy between the statements received by him was so great as to make it no easy task to give a decided opinion on the subject. He was glad that it was not the intention of his hon. friend to press the bill this session, because he was going to suggest to him to withdraw it and give time for further consideration. Nothing should be done during the recess to prejudice the cause advocated by his hon. friend.

Mr. W. Leslie proposed that the bill should be committed that day three months.

Mr. McLaren explained that all the facts of the case had not been stated, and he was sorry that the right hon. gentleman representing the Government was so rash as to say that he would do nothing during the recess in regard to granting a charter for the establishment of a college for Scotland and not for Edinburgh alone, though £40,000 had been left by a high-minded individual for that purpose. According to this bill, in case any man called himself a veterinary surgeon in England, Ireland, and Scotland, unless he had a diploma from this College, he might be fined £5 and stigmatised as an impostor. (Hear, hear.)

The order for the committee was discharged, and the bill was withdrawn.

Veterinary Jurisprudence.

KNOWLES *v.* NUNNS.

THIS case was tried in the Court of Queen's Bench, at the last Leeds Assizes. The question raised was, whether the plaintiff, under a general warranty of soundness as regards freedom of certain cattle from rinderpest purchased by him, was entitled to recover on the particular beasts bought, or on all that had died from the disease. The Court decided that the full damage (£232) came within the warranty, and gave judgment for the plaintiff for the full amount.

The Judge (Keating) ruled at Leeds that the Jury, if they gave a verdict for the plaintiff, could only do so for the first or second animal that died, the others being too "remote," but granted the power to appeal to a superior court. The remarkable fact came out in evidence that no disease had existed antecedent to the purchasing of the stock, nor had any developed itself since the deaths which occurred.

MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS WHO HAVE BEEN APPOINTED INSPECTORS FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton
Jones, A. A., Biggleswade
New, A., Ampthill
Rogerson, T. W., Bedford

Berkshire.

Allnutt, Henry, Windsor
Bailey, Robert, Lambourn
Bland, W. C., Newbury
Buckridge, W., Hungerford
Drewe, G. A., Abingdon
Field, W. A., Newbury
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Waterman, C., Reading
Wheatley, W. A., Reading

Buckinghamshire.

Beeson, S., Chalfont
Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
East, William, Princes Risborough
Lepper, Henry, Aylesbury
Lepper, George Andrew, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Rayment, S. J., Ashendon
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Barrow, Richard, Newmarket
Barrow, W., ditto
Barrow, Charles, ditto
Holl, Lewis, Outwell, Wisbeach
Knowles, Robert, Wisbeach
Scruby, Thomas, Royston
Sparrow, S., Cambridge
Wallis, Page, Cambridge
Webb, G. B., Balsham, Linton

Cheshire.

Barker, George, Brereton, near Congleton
Barker, Richard, Middlewich
Darling, James, Duddon, Tarvin
Darwell, George Henry, Knutsford
Dunn, William, Tarporley
Greaves, John, Altrincham
Maxfield, Robert, Congleton
Taylor, John Boardman, Hyde
Willett, W. G., Northwich
Wyche, T., Wilmslow

Cornwall.

Arnall, George, Bodmin
Hire, Edward, Penzance
Lamb, G. W., Liskeard
Page, George, Truro
Tucker, E. S., St. Germans
Raddall, Warne, South Petherwin

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Fisher, John, Whitehaven
Little, Joseph, Alston
Thompson, Henry, Aspatria

Derbyshire.

Flower, Henry, Derby
Hudson, T. T., Bolsover
Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, James, Exeter
Austin, Thomas D., Honiton
Bickford, Alfred, Totnes
Bickford, W. J., Kingsbridge
Brewer, William, Barnstaple
Collings, John J., Plymouth

DEVONSHIRE (*continued*).

Dyer, Richard H., Torquay
Ferris, William, Dartmouth
Gregory, T. D., Bideford
Heath, James P., Exeter
Hewish, John, Barnstaple
Leach, Edward, North-Tawton
Ward, William, Crediton
Watson, Alfred, Tiverton

DORSETSHIRE.

Redwood, Joseph, Dorchester

DURHAM.

Adamson, Thomas, Barnard Castle
Allison, William, Thornley
Dudgeon, David, Sunderland
Foreman, Thomas, Leadgate
Hall, Robert, Stockton-on-Tees
Hedley, Matthew, Darlington
Hunting, Charles, South Hetton
Loades, A. M., Bishop Auckland
Mann, Andrew, Chester-le-Street
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Peele, J. E., Durham
Plews, Thomas, Stockton
Thompson, Thomas, Sunderland

ESSEX.

Arthy, H. B., Stanway
Brook, T., Chipping Ongar
Easton, W. G., Woodford
Helmore, William, Stratford
Hutton, Robert R., Toppesfield
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Taylor, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, Sampford

GLOUCESTERSHIRE.

Morgan, C., Stroud
Thomas, Richard W., Tewkesbury

HAMPSHIRE.

Barford, John Davis, Southampton
Cartwright, Charles, Bishop's Waltham
Clarke, W. M., Christchurch
Colebrook, Charles, Basingstoke
Gates, Robert, Andover
Gould, George James, Southampton
Gregory, J. B., Portsmouth
Redford, Thomas, Winchester
Verney, R. G., Stow-on-the-Wold

HEREFORDSHIRE.

Barling, F. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Hirst, Charles, Barnet
Proctor, Harrison, Hertford
Rogerson, Ed., St. Albans
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Hockerell
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.

Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Constant, Arthur Edw., Ramsgate
Cooper, John, Ashe-next-Sandwich
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst. W. Henry, ditto
Fordham, George, Willesborough
Gregory, T., Tunbridge
Hogben, Henry, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington
Noakes, Henry, Brenchly
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Anderton, J. W., Burnley
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, J. W., Worsley
Cunliffe, Thos., Church
Ellis, John, Liverpool
Ellis, Peter, ditto
Gibson, A. L., Manchester
Haslam, J., Manchester
Heaps, William, Preston
Heyes, Gilbert, Liverpool
Kirkman, James, Blackburn
Lawson, Alexander, Bolton

LANCASHIRE (*continued*).

Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Nuttall, Ed., Rawtenstall
Polding, J. P., Bury
Richmond, Henry, Chorley
Rothwell, J. P., Rochdale
Smith, Benjamin, Ulverston
Smith, John, Ormskirk
Taylor, W., Manchester
Taylor, James, Oldham
Twist, Charles, Woolton
Welsby, Joseph, Prescot
Worthington, Wm., Wrightington
Yates, John, St. Helens

LEICESTERSHIRE.

Bailey, E., sen., Leicester
Bailey, Edward, jun., ditto
Blunt, H., Lutterworth
Brown, S., Melton
Goodall, H. J., Waltham
Gray, Charles, Kibworth
Wiggins, John, Market Harborough

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston
Chapman, John, Gainsborough
Clarke, Thomas Allan, Horncastle
Clayworth, Joseph, Spilsby
Cutting, Henry, Market-Rasen
Darby, Thomas, Louth
Dickinson, J. G., Boston
Dobson, John, Wragby
Dobson, R. W., Holbeach
Gresswell, Daniel, Louth
Hall, William, Northkillingholme
Hardy, R. T., Sleaford
Hardy, Robert, Grantham
Howse, Henry, Lincoln
Hutson, Curtis, Market Rasen
McHugh, John T., Brigg
Metherell, Richard, Spalding
Roberts, John Thomas, Long Sutton
Santy, Arthur H., Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle
Wattam, John, Stamford
Wentworth, George, Laceby
Wilson, Robert, Caistor
Wyer, Daniel, Folkingham
Wyer, Goforth, Donington

MIDDLESEX.

Boughton, Thomas Peter, Hounslow

MIDDLESEX (*continued*).

Broad, James C., Market Street, Paddington
Dale, William, Stanmore
Dexter, Thomas, 8, Motcombe Street, Chelsea
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Leggatt, J., Hanwell
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shaw, H. R., Sydenham
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Stanley, Thomas, Edmonton
Tegg, George, Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth
Wiltshire, Thomas D., Rhymney, near Tredegar
Wilkes, Thomas, Newport

NORFOLK.

Baldwin, George Thomas, Fakenham
Barcham, Robert, Paston
Beart, Walter James, Lynn
Bower, W. J. T., East Rudham
Buckingham, John, Barnham Broom
Buckingham, H., Harleston
Carter, Charles N., Swaffham
Carter, James, Litcham
Carter, Richard, East Dereham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Aylsham
Ellis, William, Hempnall
Emms, Henry G., Foulsham
Hammond, John, jun., Bale, Thetford
Heffer, Robert, Downham Market
King, Edward James, Diss
Mays, Thomas, Wymondham
Overed, John Davey, Blofield
Plumbley, George H., Skeyton
Rattee, Daniel H., Hapton
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich

NORFOLK (*continued*).

West, John, Thetford
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Aris, Benjamin B., Wellingborough
Branford, Wm. Catton, Oundle
Dawson, Jacob, Kettering
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Richardson, W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long-benton
Cope, W., Newark
Boag, William, Morpeth
Fairbairn, John, Alnwick
Hubbick, Joseph, ditto
Hunter, H., Newcastle-upon-Tyne
M'Gregor, Daniel, Seaton Delaval
Stephenson, C., Newcastle-on-Tyne
Wilkinson, Henry Etridge, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Barlow, Robert, Cotgrave
Cave, Thomas, Nottingham
Cope, W., Newark
Hudson, Richard, Moorgate, Retford
Hutchinson, Henry, East Retford
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Talbot, Francis, Whatton
Wilson, Stretton R., Ollerton
Young, Wm., Southwell

OXFORDSHIRE.

Bull, Alban, Hooknorton
Jennings, William, Bicester
Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury
Wadlow, C. H., Oxford

RUTLAND.

Parnell, Charles, Oakham

SHROPSHIRE.

Atcherley, James, Bridgenorth
Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Dorrington
Jenks, John, Ellesmere
Jones, James B., Ludlow
Litt, William, Shrewsbury

SHROPSHIRE (*continued*).

Roberts, Thomas, Oswestry

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Coles, William, Kilmersdon
Dring, C. J., Bath
Emms, William, Ilminster
Hutchings, William, Kimpton
James, Sidney, Frome
Symes, Charles, Wincanton
Symes, Thomas, Yeovil
Whitmore, George, Landport
Whitmore, Absalom, Shepton Mallet

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Cartwright, H. J., Wolverhampton
Checketts, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Richard, ditto
Pritchard, Harry D., Wolverhampton
Robinson, William, Tamworth
Walters, Robert George, Newport

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes, W., John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lowe, C., Dockhead, Bermondsey
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham

SURREY (*continued*).

Moon, James, Kingston-on-Thames
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.

Burt, Walter, Brighton
Burt, William, jun., ditto
Callow, John, Horsham
Crofts, Henry, Arundel
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Elkington, R., Coventry
Hunt, R. L., Edgbaston
Ison, William Charles, Atherstone
Mather, Frederick, Warwick
Parker, J. M., Birmingham
Proctor, Alfred B., Meriden
Rose, James, Warwick
Stanley, Edward, Birmingham
Stanley, Wm. Thomas, Leamington
Walker, Alfred, Rugby
Watson, Walker, ditto

WESTMORELAND.

Eastcott, W., Kendal
Herd, John, Appleby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Coleman, John, Salisbury
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Barker, E. T., Pershore
Blakeway, Francis, Stourbridge
Boulton, R., Bromsgrove
Butler, T. W., Evesham
Harber, W. Alex., Kidderminster
Huntress, J. R., Dudley
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, J. W., Skipton-in-Craven
Barker, Charles, New Malton
Barker, William, Middlesborough

YORKSHIRE (*continued*).

Bourdass, George, Bridlington
Bowman, J., Elvington
Bowman, Thomas, Croome
Boyce, J. H., Goole
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, Bradford
Cooper, J., Market Weighton
Cortis, Richard, Shipton
Cuthbert, John, Leeds
Danby, F., Driffield
Day, Frederick, York
Dearlove, William, Harrogate
Douthwait, William, Beverley
Dray, Edward C., Leeds
Edmundson, W., Hornby
Elam, William, Huddersfield
Emmot, D. C., Keighley
Fallding, S. F., Wakefield
Freeman, Joseph, Hull
Fryer, J., Kirby
Harrison, T. M., Thirsk
Hedley, F., Richmond
Hedley, J. W., ditto
Holt, H. L., Northallerton
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Lockwood, N. J., Kingston-upon-Hull
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Naylor, E. M., Wakefield
Nicholson, Robert, Womersley
Patterson, Charles, Dewsbury
Pemberton, G. H., Knaresborough
Pennock, James, York
Ringrose, J., Weaverthorpe
Robinson, A. E. G., Snaith
Scriven, William, Aberford
Secker, Charles, Knaresborough
Secker, Thomas, Ripon
Stevenson, John, Whitby
Stoddard, John, Richmond
Stone, Matthew, Doncaster
Taylor, W. Baxter, South Anston
Thornton, James, Easingwold

WALES.

Brecknockshire.

Ferris, John, Brecon
Llewellyn, H., Brynmawr, Brecon
Stokoe, Thomas, Hay

Cardiganshire.

Bodington, George, Canton, Cardiff

Carnarvonshire.

Williams, Rumsey James, Rhyddallt

Denbighshire.

Edwards, John, Abergele
Kennedy, Thomas, Wrexham
Rowlands, David, Llanrhaiadr-yn-Mochnant, Oswestry

Pembrokeshire.

James, D. E., Old Bridge, Haverford West

SCOTLAND.

Aberdeenshire.

Snowball, Matthew C., Huntley
Thompson, James, School Hill, Aberdeen

Ayrshire.

Aitken, William, Kilmarnock
Irvine, William, Pirleyhill, Girvan
Tennant, C., Tunnock, Maybole

Berwickshire.

Baillie, James, Lauder
Hogarth, George, Berwick
Lothian, William, Dunse
Watson, Robert, Coldstream

Clackmannanshire.

Knight, Robert, Alloa

Dumbartonshire.

Gardner, James, Alexandria
M'Dougall, James, Old Kilpatrick
Sproull, James, Milngavie

Dumfriesshire.

Paterson, Bell Robert, Dumfries

Edinburghshire.

Aitken, John, West Hart Street, Dalkeith
Currie, John, Caitha Stow
Grainger, James, Rosewell, Lasswade, Edinburgh
Worthington, William, Clyde Street, Edinburgh

Fifeshire.

Balfour, Andrew, Balwearie Mill Kirkcaldy
Duncan, A., Colinsburgh
Morris, John, Torryburn, by Dunfermline

Forfarshire.

Keay, James, Forfar
Lyon, William, Forfar
Sandeman, James, Kerriemuir
Taylor, Alexander, Brechin

Haddingtonshire.

Muir, Alexander C., Dunbar
Storie, Francis, East Linton, Prestonkirk
Young, George, Haddington

Kincardineshire.

Low, John, Auchinzeoch, Fordoun
Robertson, Alexander, Stonehaven
Simpson, Andrew, Fettercairn

Kinross-shire.

Hepburn, John, Milnathort, Kinross

Kirkcudbrightshire.

Irving, John, Castle Douglas

Lanarkshire.

Cockburn, William, Glasgow
Finlater, Richard, Carstairs-by-Lanark
M'Call, James, Glasgow
Pettigrew, Robert, Strathaven
Robertson, Adam C., Airdrie
Steele, John, Biggar
Young, David, Hamilton

Linlithgowshire.

Borthwick, John, Kirkliston
Nimmo, Alexander, Linlithgow
Nimmo, Andrew, Linlithgow

Peeblesshire.

Ferguson, Patrick, Peebles.
Young, William, Hallmyre Dean, Leadburn

PERTHSHIRE.

Connacher, Charles, Perth
Galloway, Peter, Loan of Errol.
Glennie, Mathew, Camp Muir, Coupar-Angus
M'Gregor, Andrew, Mouzievaird, Crieff
Panton, John, Blair Athole
Robertson, Donald, Kenmore, Dunkeld
Robertson, John, Madderty, Crieff
Smail, D. C., Blairgowrie

RENFREWSHIRE.

Donaldson, John, Paisley
Pottie, Alexander, Renfrew
Robinson, Alexander, Greenock

ROXBURGHSHIRE.

Bowie, Messrs. Andrew and James, Hawick
Robertson, William, Kelso
Smith, Alexander, Appletreehall, Hawick

STIRLINGSHIRE.

Waugh, William, Stirling

MISCELLANEA.

DOGS AND CATS.

ACCORDING to the Chancellor of the Exchequer, there are 300,000 dogs within the United Kingdom for which their owners pay licence, and it is computed that only one dog in ten is so licensed. Therefore we have amongst us no fewer than 3,000,000 of dogs. As for cats, we have no such clear statistics; but we may set them down at double the number—that is, 6,000,000, as against 3,000,000 of their canine enemies. The sum that these animals cost their owners per annum is something prodigious, and may be computed as follows:—Dog licences, at 12s., £180,000; keep of dogs, at 1d. per day, £4,562,500; wages of keepers, at £52, £15,600; keep of cats, at $\frac{1}{2}$d. per day, £4,562,500; total, £9,320,600. The amount is a startling one, and, so far as the number of animals is concerned, does not appear exaggerated. Taking the population of the United Kingdom at 30,000,000, the estimated number of dogs gives one to every ten of the population, and of cats one to every five.

THE MYSTERY OF MILK.

SOME people wonder that under existing circumstances the price of milk has not risen. But the rinderpest does not affect the cow with the iron tail.—*Punch.*

OBITUARY.

WE regret to have to record the death of John Bell Henderson, M.R.C.V.S., third son of the late Alexander Henderson, veterinary surgeon to the late Queen Dowager. He died at the early age of 32, of consumption; but although his career was permitted to be only a short one, he had won for himself a good name, and the respect and confidence of a large circle of friends. His diploma bears date May 10th, 1854.

THE

VETERINARIAN.

VOL. XXXIX. No. 465. SEPTEMBER, 1866. Fourth Series. No. 141.

Communications and Cases.

REMARKS ON SOME OF THE DISEASES AFFECTING THE FACIAL REGION OF THE HORSE'S HEAD.

By Professor VARNELL, Royal Veterinary College, London.

IT may not be altogether uninteresting to the veterinary student and the junior members of the profession to peruse a few detailed remarks on some of the diseases peculiar to the facial region of the head of the horse. There may be even some of the senior practitioners whose experience in the lesions I am about to describe is comparatively limited, and to such my remarks may not be altogether unacceptable.

These thoughts have induced me to appropriate a portion of my leisure to preparing for the pages of the *Veterinarian* a description of the diseases of the facial division of the horse's head, omitting the eyes, which may be considered as placed in this region.

The remarks I am about to make will be illustrated, as far as I am able, by cases that from time to time have come under my notice or have been communicated by professional friends whose statements can be fully relied upon.

Before undertaking this task I discussed in my own mind the propriety of introducing matter collected from published cases on the same subject, many of which may be found in

books and periodicals on veterinary surgery. I felt assured that a compilation of these cases would be interesting; nevertheless, I came to the conclusion that my remarks should be, in the sense the term is usually accepted, as original as possible. I scarcely know, however, whether I am justified in using the term *original;* for those who are familiar with veterinary literature, or have had the opportunity of hearing lectures on the subject, may detect sentences, perhaps even paragraphs, embodying ideas nearly identical with those already promulgated. If this should occur without acknowledgment, it will be from my not knowing the precise source whence they emanated.

The diseases which I am about to describe may, as in any other part of the body, be either *traumatic*, *symptomatic*, or *idiopathic* in their nature; that is, the disease is *traumatic* when it depends upon external violence, *symptomatic* when its origin is due to the existence of some other disease, and *idiopathic* when it arises as a primary disease. The last two terms are so frequently blended one with the other that confusion often takes place as to which division the disease really belongs.

In the treatment of these diseases it is, in my opinion, very important that a narrow defined line should, as far as possible, be drawn between these divisions, otherwise our efforts to effect a cure may be directed to that which is a symptom only, instead of the primary disease itself.

I shall consider the causes of these diseases under two heads, viz., *predisposing* and *exciting*, the former being such circumstances and endowments as render parts liable to become diseased, and by the latter is to be understood those external influences by which diseased action is brought about in parts already endowed and prepared for such a change.

The majority of diseases affecting the facial region of the horse are traumatic in their nature, and will be the first I shall describe.

Those who are familiar with the habits of the horse, whether domesticated or in a state of nature, can easily conceive how any of the bones of the face may become fractured. But it is only those who are acquainted with the anatomy of these parts, and the purposes they serve in the animal economy, that can with any degree of certainty prognosticate how such lesions are likely to terminate. Such injuries as the common observer would look upon as very formidable might, to the scientific practitioner, be considered of but little importance; while, on the other hand, those of a truly

serious nature would, to the non-scientific man, appear of great importance.

Injuries of a very grave-looking character in this region, even if produced with considerable violence, are not very often attended with fatal results, provided the displacement of the parts does not interfere with the function of respiration, or with the partaking of sufficient food to support life.

There is no organ placed in this portion of the head the destruction of which would cause immediate death. Nor do I believe the function of the brain would be materially interfered with by any amount of concussive force which we can reasonably suppose, under ordinary circumstances, could be applied to the anterior part of the maxilla. The great length of this division of the head would so far break the shock as to neutralize its effects. Such force, however, if applied with the same intensity to any other part of the head, might cause fracture, and, perhaps, displacement of the parts involved. The question, then, for the veterinary surgeon to determine is, whether it would be better to have the horse destroyed or to put him under treatment?

The bones of the facial region are not only beautifully arranged, so as to ensure symmetry combined with lightness, but their individual construction and mode of connection by sutures are well adapted to prevent the force of heavy blows injuring those organs which are lodged in cavities formed by them, or that pass through their walls. The most important of these are—the *teeth*, in the alveoli; the *lachrymal duct*, in its osseous and membranous canal—important portions of each of the three divisions of the fifth nerve—and the tongue, in the cavity of the mouth.

The flat bones of which the osseous part of the face is made up, having each two tables of compact structure, with an intermediate cancellated texture, may receive blows of sufficient force to indent, or even fracture, the outer table without the inner one being seriously injured, unless the lesions produced are very great and complex. These facts may appear to some persons to be very trivial, but they must not be lost sight of when reflecting on the several cases we are about to describe.

Causes which predispose to fracture.

The chief of these is old age. There are also certain vices that may have been inherited or acquired. The bones in old age will have become hard and brittle, and thereby are less yielding. Under certain conditions induced by disease they also become fragile, and are then easily broken.

Acquired vices, such, for example, as the horse being a "hard puller," predispose to fracture of the lower jaw. This tendency is produced through disease caused by the intense pressure of the curb and heavy bit, with its long levers, usually used for such horses, and acted upon, perhaps, by hands guided by an unreflecting mind.

Again, horses that are addicted to lay hold of any hard substances within their reach with their teeth when they are being cleaned or saddled, and at the same time suddenly run backward, may, should the incisor teeth accidentally get hooked upon the agent laid hold of, pull one or more of them out, and with them, perhaps, a portion of the jawbone; or, from the same cause, the jaw may become fractured, but the teeth be retained in their sockets.

Exciting or determining causes of fracture.

These result from external violence, such, for example, as kicks from other horses; forcibly coming in contact with hard substances when running away, or by being struck by carts or carriages drawn by runaway horses. If from kicks, the lower jaw is most likely to be injured, but if from other causes, the nasal and frontal bones are most liable to suffer.

These are a few examples of the causes likely to produce fracture of the facial bones of the horse, which, together with the treatment and results, I will now consider more in detail.

I have omitted to mention a cause by which the boundaries of the alveoli of the incisor teeth are very commonly fractured. It very often comes under the notice of the veterinary surgeon, and the act which gives rise to it is so cruel that, in my opinion, he who countenances such a procedure would be an unworthy member of the profession. The fractures I allude to are those produced by extracting the corner temporary incisor teeth, with a view of making the mouth of a four-year-old horse appear like that of a five-year-old.

Some few years ago a veterinary surgeon, the late Mr. W. McKenna, of Belfast, with that feeling of humanity towards the lower animals which ought ever to be a prominent feature in the character of every member of the profession, suggested to the Society for the Prevention of Cruelty to Animals the advisability of taking legal measures for the suppression of this cruel and, at the same time, useless act. It can in no way benefit the poor horse, and I have yet to be persuaded that the permanent teeth are in the slightest degree hastened towards their full development by the temporary ones being removed. I have no doubt but the permanent teeth are earlier brought into view by this operation

of extracting the temporary ones; indeed, it must be so, because the temporary teeth and the membrane which naturally covers them are removed. Moreover, I have no doubt that persons not acquainted with dentition, and the several changes that take place in the crown of the teeth before they are fully developed, are very easily deceived by this procedure. Dealers and many others buy four-year-old horses, knowing that the attempt has been made to make them appear older than they are, but they would much rather buy a real five-year-old horse in which the mouth had not been tampered with; or, if they required four-year-old horses they would wish their mouths to be natural. If, however, a five-year-old horse is more readily saleable, and will fetch more money than a four-year-old, but cannot be bought so cheaply, then under such circumstances an attempt will be made to convert the four-year-old into a five-year-old by the process I have named. The breeders and "horse-graziers," I expect, practise this dental deceit much more frequently than do the large horse-dealers in the metropolis, for, if they can pass their horses off as five years old when they are really only four, they save a year's keep, which is a great object. But take whatever view you may of this procedure, the only object sought for must be to deceive for the purpose of gain; there can be no other, and the pain inflicted on the poor horse by the act is not heeded.

If in these instances the temporary teeth were extracted by persons who could perform the operation without injuring the parts to the extent that I have seen done, it might, perhaps, be tolerated; instead of which the greatest amount of ignorance and cruelty must have been exercised to produce the mischief I have often witnessed. I have seen the membrane covering the anterior surface of the gums torn off the bone as much as an inch and a half from the margin of the dental socket, and by so doing the outer osseous wall of this cavity is often fractured and followed by ulceration of the bone.

These few facts, in my opinion, are sufficient to justify us, as veterinary surgeons, in discountenancing any such procedures. There are instances, it is true, in which it is necessary to remove temporary teeth, or, it may be, a permanent one, so as to enable the horse to feed with more comfort to himself and more profit to his owner; but when this is required to be done a competent veterinary surgeon should be engaged to perform the operation.

(*To be continued.*)

A CYST IN THE CENTRE OF THE TONGUE OF AN OX, CONTAINING HAIR AND OTHER MATTERS.

By the Same.

This curious and unique specimen was placed in my hands a few days since by Mr. Packman, M.R.C.V.S., assistant to Mr. Rushall, of Walthamstow.

Mr. Packman verbally informed me that he became possessed of it in the following way. A farmer, living in the vicinity of the above town, bought a pickled ox-tongue, for his own use, which, as he thought, was a very good one. After it had been boiled in the usual way, it was in due time brought to table, to be partaken of by the family.

I was informed that the farmer commenced carving this tongue by cutting through it in a transverse direction, midway between its root and apex or tip. In performing this operation the carver found that his knife came in contact with quite a different substance to what he expected to find in a tongue, and, upon an examination being made, a softish body, about the size of a hen's egg, containing hair and other matters, was found in its interior.

The farmer, not knowing what the nature of this, to him, singular substance could be, or how it could possibly get there, placed the whole of the tongue, which was otherwise untouched, in the hands of his veterinary surgeon, who, without disturbing the substance in question, brought it to me, with a request that I would examine it.

Examination of the specimen.

The tongue, as viewed externally, appeared to be quite regular in form, and of the same colour and consistence that we should expect a tongue to be that had been salted and boiled. The form of the cyst I have indicated. Its long diameter, which extended in a line with that of the tongue, was about two and a half inches in length, while its short one was not more than an inch and three quarters. The large extremity of this ovoid body was placed towards the root of the tongue. I very carefully examined the outer surface of this organ, but failed to detect any opening which could possibly communicate with its interior.

In the centre of the tongue I found the singular substance above alluded to, which, when inspected, was found to be

thus made up and to contain the following materials:—The outer case, or covering, had the character of skin, and on its inner surface a considerable quantity of hair was met with; and, in places where depilation had taken place, hair-follicles could be plainly seen with the unaided eye.

The cuticle-like closed sac also contained a softish mass of granular matter, mixed with hair, epidermoid scales, and débris, which, no doubt, had been periodically shed, thereby gradually distending the sac until it reached its present dimensions.

Congenital anomalies of the skin have occasionally been met with in various parts of the body, but never before, that I am aware of, in the substance of the tongue; not that I can see any reason why they should not be found in this situation as well as in other parts of the body.

The specimen is certainly a very singular one, and, personally, I feel indebted to Mr. Packman for sending it to me.

MALIGNANT TUMOURS.

By E. Stanley, V.S. 5th Lancers, Lucknow, India.

The subject of this case was an aged cross-bred Arab horse, of plethoric habit, and very fat.

April 20th, 1864.—Admitted with tumours situated on the ventral surface of the root of the penis, inside the sheath. The organ being withdrawn to its greatest extent, four or five little tumours were observed, having raw surfaces, closely incorporated with the skin, varying in size from a bean to a marble, and resembling warts, but not so prominent. No swelling existed about the parts, and very little pain.

The treatment consisted in the use of mild astringents.

23rd.—The tumours have much increased in size and number, and are accompanied by local inflammation.

Antiphlogistic treatment, both internally and locally.

May 3rd.—A broad hard ring surrounds the penis, from two to three inches wide; the tumours have rapidly grown into one mass, the skin which covered them being entirely ulcerated away. The mass is closely united to the surrounding areolar tissue, but free from the body of the penis. The purgative medicine given has acted well; the animal's appearance is the picture of health, he is in good spirits, has

an excellent appetite, has never had bursutter nor been under treatment before.

Having dissected the entire tumour away and cauterized its bed, I gave a dose of laxative medicine, and ordered low diet.

14th.—Wound doing well. It is covered with healthy granulations, showing a pink margin of new skin. Treatment, simple dressings.

18th.—Tumour again growing along the upper edge of the wound, the skin ulcerating as it extends.

Treatment.—I again used the scalpel freely, removing every diseased part, and applied the actual cautery to the whole surface of the wound.

20th.—The cicatrix has separated, and to my surprise the entire surface is sprouting with diseased granulations. In three days it had increased to nearly twice its former size, the skin all round ulcerating, and the conglomerate tumour growing in thickness pretty evenly all over the surface. It caused so much pain that it was found necessary to cast the animal before the penis could be withdrawn, so as to clean and dress the sore.

To bring this tedious case to a close, I will sum up several weeks' treatment in a few lines. Stimulating applications were resorted to, likewise astringents and caustics were severally tried, but with little success. Salivation, accompanied by mercurial washes, was found equally unavailing; iodine, given internally and locally applied, afforded the most encouragement. After nearly two months, namely, on—

July 25th, the tumour was found to be reduced to the size of a pea, the cicatrix was thoroughly healed, and there was no trace of morbid growth beneath the pink skin; the patient was having regular exercise, returning to his usual diet, and to all appearance doing well.

27th.—Only two days later the tumour displayed its former characteristics, presenting to view a raised, raw surface, as large as a penny-piece, and looking as unhealthy as on the animal's first admission. I now resorted to a free application of arsenious acid, and ordered low diet.

Aug. 5th.—Large sloughs have separated. Dress the sore with dilute astringents. From this date the parts gradually healed.

Sept. 30th.—Horse discharged cured.

Twelve months have elapsed without any recurrence of the disease being observed.

Another Case of Tumours, supposed to be Malignant.

The subject of these was an aged country-bred horse of plethoric habit.

May 27th, 1865.—The tumours followed a superficial wound on the under eyelid caused by a bite of a horse, and the surrounding parts were swollen from the contusion. Treatment, simple dressing.

June 3rd.—Apparently doing well; swelling subsided; sore healthy.

10th.—The sore is studded with small white granulations, is moist and unhealthy. Freely apply Argenti Nitras.

Oct. 10th.—For the last four months the sore has resisted every known remedy. Simple lint, with fluids, and powders, whether stimulant or sedative, astringent or caustic, locally applied or internally administered, have been found equally unavailing, its situation making it very difficult to apply dressings. A tumour has slowly grown, having a raw exposed surface; the cornea is much inflamed from its pressure, and it involved two thirds of the lower eyelid and posterior canthus. It is conglomerate, and irregular in form. As the eye was in danger, and excessively painful, I determined on removing the diseased parts by an operation. Desirous of retaining as much of the lower eyelid as possible, the tumour, closely attached to all the surrounding tissues, was removed with some difficulty. Its surface was raw and fleshy, with little projecting granules or flocculi of lymph, which were readily separated from little cysts on pressure, the beds of which bled freely. On a section being made its appearance was fatty, but no fat-cells could be detected with the microscope. There was no trace of earthy granules, as we find in bursutter sores. Having secured the lid in its place by suture and washed the wound with a caustic solution, I covered it with damp cloths.

17th.—Apparently doing well. There is no pain, and the animal will allow the wound, which is rapidly closing, to be cleaned without any restraint. Treatment, simple dressing.

Nov. 2nd.—Unhealthy granulations are sprouting from the surface of the wound, which is very painful. Cauterize with Argenti Nitras.

13th.—Seemingly doing well. Continue simple dressing.

20th.—Cicatrix very small and healthy. No trace of the tumour.

27th.—Wound quite healed, but there is slight tumefac-

tion, with some inflammatory symptoms just below the old scar. Treatment depletive.

Dec. 9th.—Tumour again formed; is nodular, and where most prominent the skin has ulcerated, displaying a surface similar in its unhealthy appearance to the tumour so recently removed. It is daily, although slowly, increasing in size, and is extremely painful.

15th.—Again it is found necessary to operate, as the tumour has considerably increased in size, and occupies nearly the same situation as the first did. It is conglomerate in its structure, but not so firmly attached to the surrounding tissues. (I send this tumour to you in spirit. It is about half as large as the first removed.) After cauterizing its bed, simple dressing was used.

Jan. 10th, 1866.—The wound has healed completely, but part of the eyelid is deficient. The eye has not suffered, excepting that a slight opacity exists at the postero-inferior part of the cornea.

14th.—Pain and swelling are again evident under the remaining part of the eyelid.

18th.—A tumour has grown to the size of a marble; the skin is very tense and highly inflamed over it. I operated by making a crucial opening (before ulceration had commenced), and the tumour escaped, on applying a little force, like a kernel from a nut. I subsequently cauterized the exposed surface with nitric acid.

Feb. 6th.—Wound healing fast. Continue simple treatment.

17th.—Cicatrix healed, no thickening being left in the surrounding tissues.

Animal discharged cured.

March 1st.—He continues at his duty, with no trace of recurrence of the disease.

Remarks.—There was a great resemblance between these two cases in the appearance of the morbid parts, also in the recurrence of the tumours, tardy progress, and obstinacy to being exterminated. I have forwarded you one of the tumours removed from the last subject, and shall esteem it a favour if you will give me the benefit of your remarks on these cases.

To Professor VARNELL.

REMARKS ON THE ABOVE CASES BY PROFESSOR VARNELL.

These cases are, in my opinion, of greater importance than many persons may suppose them to be; the one first de-

scribed being principally so from the novelty of its character, and the other from its pathology and treatment not having been specially alluded to in published accounts of diseases.

The first may be, and possibly is, almost peculiar to India, or similar climates, and, therefore, may be but little, if at all, understood by English veterinarians. Even in India it may not be very common, or, I infer, we should have heard or read something about it ere this. But whether it be so or not, the case is a highly interesting one, especially to the young veterinary surgeon who is about to proceed to India. Indeed, the description of this or any other disease peculiar to that country will prepare his mind for what he may have to contend with.

That this is not a simple everyday disease is evident from the difficulty Mr. Stanley had in eradicating it. We see that many suitable remedies which its apparent nature suggested were tried, but without success. The seeds of the disease, if I may be permitted to use the term, were unremoved, and Mr. Stanley did not succeed in curing his patient until arsenic was employed. This agent, above all others, seems to possess the power of destroying morbid growths, and normal structures also if the greatest care in using it is not observed.

That this disease is malignant in its nature there are strong grounds for believing. Nevertheless, it requires to be thoroughly investigated, both experimentally and microscopically, before this point can be satisfactorily settled. This task we hope will be undertaken by Mr. Stanley should an opportunity again offer itself; and the most important points to determine are, first, the nature of its structural elements; secondly, its origin or cause—if it is propagated by sexual intercourse, or if it likewise arises in the system from common causes.

With regard to the second case, Mr. Stanley hesitates to state positively his belief respecting the true nature of the disease in the eyelid, yet, judging from his summing-up remarks, we are, I think, led to infer that he inclines to the opinion of its being malignant. This idea, no doubt, chiefly arises from its very intractable nature, the length of time, and the varied means he was compelled to resort to to eradicate it from the part affected; whch, I admit, are feasible reasons for such an opinion. Mr. Stanley's doubts, however, lead us to infer that he is desirous of leaving this point an open question, to be decided by further experience and investigations.

Now, as I am requested by him to make some remarks on

these cases, I may state that, while I consider it highly probable that the disease in the first one was malignant, on the other hand, I look upon the second case as non-malignant. The enlargement of the eyelid depended upon a number of simple, encysted, fibrous tumours in the structure of the lid, which were chiefly subcutaneous. I was first induced to think thus from reading the above description, especially in reference to the last operation, where it is stated that, "by making a crucial incision (before ulceration had commenced), the tumour escaped, on applying a little force, like a kernel from a nut;" but, in addition to this statement, my idea has been confirmed by an examination of the tumour which Mr. Stanley dissected from the eyelid and forwarded to me.

I have met with several similar cases to this, in some of which the encysted tumours have been numerous, and varied in size from a pin's head to that of a small nut. Those most superficially placed commonly produce ulceration of the skin by the pressure they impart to it, and the exposed surfaces of such afterwards split up into many parts, giving to them a mulberry-like appearance. Or, in some instances, they resemble the end of a worn-out painter's brush. These tumours frequently become attached to the margin of the ulcerated part of the skin, and are rendered thereby difficult to remove. The same variety of tumour is often met with in other parts of the horse, but nowhere have I found them so difficult to remove as when situated on the eyelid. These tumours have very often been looked upon—after they have ulcerated their way through the skin, and split up as above described—as warts, which, I think will be admitted, is an error. The subject is one which requires ventilation, and we feel indebted to Mr. Stanley for bringing it before us.

OBSERVATIONS ON THE CATTLE PLAGUE IN IRELAND AND THE CATTLE DISEASE IN THE ISLE OF MAN.

(*Continued from* p. 635.)

In pursuing an inquiry for the purpose of ascertaining whether a disease which has suddenly appeared among animals in one place is identical with a malady previously known to exist in another place, attention will naturally be directed to the circumstances under which the outbreak occurred, as well as to the symptoms exhibited by the sick

animals, the lesions discovered on *post-mortem* examination, and the general character of the disease. It is possible that the evidence will be in every particular conclusive that the mode of communication from one place to another can be demonstrated, that the symptoms and *post-mortem* appearances and all the essential characteristics of the one disease exist in the other; but more commonly the evidence will be defective often in important points. It may not be easy to show how the disease was introduced, circumstances may arise to modify the indications, and complications may occur to disturb the uniformity of the morbid changes, rendering it necessary to separate the positive evidence from that which is merely corroborative. It is therefore of the first importance to determine in what the positive evidence consists. If it is necessary, before the fact of the existence of any disease is admitted, to be able to show in what manner it arose, or through what channel or by what agency it was introduced, the presence of the Russian cattle plague in our own country is not capable of proof at the present moment, as no evidence of a positive kind exists as to the manner of its introduction; but it is manifestly an absurdity to admit that any fact may be doubted on the ground that it is impossible or difficult to account for it.

Providing that a certain disease is characterised by indications which belong to no other known malady, positive evidence of the presence of that disease exists whenever those characteristic indications are detected. In reference to cattle plague, it is therefore only necessary to decide what are the essential characters of the malady in order to be enabled to distinguish it from all other affections. Symptoms expressive of systemic derangement are general and particular. Many, if not all diseases, have some signs in common; a peculiarity in an animal's aspect is sufficient to prove illness without in any way defining the nature of the derangement, but in some instances a special symptom is alone diagnostic of a malady; for example, the irruption upon the surface in smallpox. The associated symptoms are of little or no value in assisting the observer to a conclusion, but an examination of the papulæ leaves no doubt of the nature of the disease, as no other known malady is distinguished by the same eruption; so the presence of the irruption is positive evidence of the disease, quite irrespective of surrounding circumstances. It may not be possible to explain the origin of the outbreak, but the fact of its occurrence is in no way modified by that difficulty.

In cattle plague there is a symptom, and only one, as

characteristic as the eruption in smallpox, viz., a peculiar condition of the buccal membrane, indescribable, but easily recognised, quite unlike the eruption in foot-and-mouth disease or any other disease affecting the mouth. Whether this condition be designated by such terms as "abrasion," "the loosening of the epithelium," "raw places," "cheesy exudation," is of no consequence; no arrangement of words can convey an idea of the peculiarity of the appearance presented by the membrane in a well-marked case of this disease, and no difficulty could arise in distinguishing it from any other disease in the same parts; but it unfortunately happens that this symptom is not always present to such an extent as to be readily detected. In many instances, when the affection assumes a mild form, the buccal membrane remains unaffected, save at the point where the gum encircles the teeth, and thus this most distinctive sign loses its value in consequence of not being invariable. It nevertheless deserves to be estimated as of great importance in the evidence, because when it exists it amounts to absolute proof of the presence of cattle plague; and even when the anterior part of the mouth gives very slight indications of disease a careful *post-mortem* examination of the posterior part, particularly along the palate, the gum surrounding the molar teeth, and the velum palati and fauces, will frequently afford satisfactory evidence of the existence of this peculiar lesion.

Besides the diseased condition of the membrane of the mouth, there is no single symptom which can be accepted as a proof. Next in importance is the state of the mucous membrane of the vagina; but in addition to the fact of this evidence only existing in the female, the same condition is occasionally seen in other diseases, and may exist in simple fever after parturition or during œstrum. While, therefore, the almost uniform presence of a peculiarly congested state of this part, with the secretion of an adhesive muco-purulent fluid, is one symptom of plague, it is not, taken by itself, a positive indication. Of the eruption upon the integument very little can be said; in the majority of cases it is ill-defined, and we are hardly in a position to assert that it does not exist to this extent in other diseases. When it is well marked it affords corroborative evidence, but it is very doubtful if it ever goes beyond this.

Most of the signs observed in cases of cattle plague, which are indicative of the nature of the disease when taken cumulatively, would not, if isolated, even lead to a suspicion of its existence; the loss of milk, dullness, impaired appetite, discharge of tears from the eyes, mucus from the nostrils, the cough,

difficult breathing, shivering, diarrhœa, and congestion of the membrane of the genital orifice, are all observed to some extent in other diseases, although when estimated in association with the circumstance of the animal's position they may be more than sufficient to justify a positive opinion.

Increase in the temperature of the body has no appreciable value as an evidence of the existence of cattle plague, because in simple fever arising from an inflamed udder, or in ordinary bronchitis and in many other diseases, the internal heat is found to be much higher than in a state of health; and the thermometer will commonly indicate 105 or 106 in animals suffering from one of these common affections; but when used with care, and with a proper estimation of the value of the evidence which it affords, the instrument is of the greatest use to the scientific inquirer. In none of the ordinary febrile affections does the temperature rise until the animal is obviously ill, but in animals that are affected with plague, during the incubative stage, and while in apparent health, the thermometer will indicate 104° or 105°. Possibly the same thing may be true of other diseases having an incubative stage, but so far as cattle are concerned we are not aware of any affection in which this rise of heat is observed before other symptoms are perceptible; it certainly does not exist in pleuro-pneumonia nor foot-and-mouth disease. When cattle plague is fully developed the temperature varies considerably; an animal which soon after receiving the infection shows a temperature of 105°, increasing to 106° or 107°, in the course of a few hours after reaching the highest point may suffer a considerable diminution of heat, and after registering one day 106° the thermometer on the following day may indicate 103°, and on the next the temperature may be a little above 100°, notwithstanding that all the symptoms of plague are present to a marked degree. It must therefore be borne in mind that, of two animals both decidedly affected with plague to an extent that renders any doubt or mistake impossible, one may indicate a temperature of 106° and the other 101°, at the same time the symptoms may be so nearly alike in both cases that the observer could not, by merely looking at the animals, form an opinion as to which of them would indicate the highest temperature. These facts, and they have been verified in our own investigations frequently, do not militate against the use of the thermometer as an infallible indicator of the amount of fever in the system, but they entirely negative the idea that the rise of temperature is a positive evidence of plague.

The infectious nature of the disease is another characteristic which cannot be accepted alone as a proof of the existence of cattle plague, although, taken in conjunction with other evidence, it is a very important element, because we know of no other infectious or contagious disease which possesses the distinctive features of cattle plague.

Speaking of the evidence obtainable by an examination of animals suffering from the disease, it may be assumed that the evidence of cattle plague is complete if, in the incubative stage, the temperature rises to 105° or 106°, and if the disease is infectious, and that during its development the ordinary symptoms which indicate plague are observed; but only one symptom, and that not of uniform existence, can be accepted singly as positive proof—viz., the peculiar condition of the mouth which is seen in the most decided cases.

Post-mortem investigations are popularly held in repute, under a vague general conviction that by carrying the inquiry into the interior of the body all that was previously hidden becomes immediately palpable. Admitting the advantages of *post-mortem* examinations, we are nevertheless constrained to remark that their value entirely depends upon a previous knowledge of the normal and morbid appearances of the parts under examination. Every anatomist can understand what many practical men know for a fact, that unskilled persons examining an animal that has died are inclined to ascribe its death, as a rule, to any cause rather than the right one. Congestion of one lung, the one naturally of the side on which the animal has lain after death, will be immediately accepted as a satisfactory solution of the difficulty; an old lesion, again, is often estimated much beyond its value as a producing cause; and generally the more minute the inquiry the greater the number of errors that result, in consequence of the confounding of various healthy and diseased conditions with the morbid changes which are the immediate result of the disease from which the animal has died. We are describing the plan of reasoning adopted by an ignorant man—ignorant, at least, of anatomy; but it must be admitted that ignorance is only a relative term, and that every examiner may be ignorant of something of essential importance, and, in so far as he is unacquainted with the variation of appearances in healthy structures, and of the changes induced by various diseases, he in a degree represents the unskilled dissector. The advantages enjoyed by the members of the veterinary profession in the opportunities which they have of making *post-mortem* examinations are often a subject of remark; but, meanwhile, what do those

examinations teach us of the condition of parts which are not inspected. In a *post-mortem* examination of an animal that has died from pleuropneumonia, how much do we learn of the condition of the mucous membrane of the stomach and intestines? or in seeking for morbid changes in the brain, what do we discover in the heart, lungs, or liver? Practically we search for the cause of death, and having found it, or what we think sufficient to deserve the title, the inquiry is at an end. We do not make these observations in a cavilling spirit, but rather in extenuation or explanation of the fact which recent investigation has developed, that all the ordinary lesion of cattle plague (excepting those which exist in the mouth and fauces) may be observed either in other diseases or in the healthy subject, and that, therefore, none of the *post-mortem* appearances taken singly can be safely accepted as proof of the existence of cattle plague, although when in combination, and connected with the symptoms shown during life, they are valuable as corroborative evidence.

In answer to our inquiry as to the exact amount and kind of evidence required to prove the existence of cattle plague among the stock of a country, it may be stated that if during the observation of a number of cases all the symptoms of the disease are discovered, and all the *post-mortem* appearances are detected, and if the disease manifests the tendency to spread among animals that have been in contact with the diseased ones, the evidence of the nature of the affection is complete, and the fact stands altogether independent of any circumstances of difficulty attending the explanation of the origin or mode of propagation of the disease.

Upon this principle we propose to extend our remarks to the alleged outbreak of cattle plague in Ireland and in the Isle of Man, assuming that in both cases there was evidence sufficient to justify an inquiry, and pointing out in which case and in what way the evidence was deficient.

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 638.)

Having now reached the tarsus, we must exercise no ordinary amount of skill and tact in dealing with its diseases.

They are not numerous, but their importance no one will attempt to deny.* I do not hesitate to assert that many animals having diseased hocks are passed as perfectly sound, and believed to be sound too. It does not require any vast amount of anatomical knowledge to detect an exostosis upon this joint, which every horse-dealer and every groom can see; but there are diseases to which this part is liable that cannot be seen by these persons, nor, indeed, are they visible to the pathologist, except in his mind's eye. What, then, does this fact (if fact it is) prove? Simply that a man, to thoroughly understand his position, must of necessity not only be conversant with the anatomy and physiology of the parts, but he also ought to be acquainted with their distinguishing characteristics in disease. This knowledge is not easy to obtain, except in the knacker's yard, and not even there without a certain amount of knowledge of the animal's previous history. I say knowledge advisedly. I don't mean hearsay knowledge, but knowledge of that positive and practical description which will enable him to say he has known such and such a horse for so long a time, and the action of the joint was of a particular kind, and so on. If he is able to acquire this kind of information in the manner described, it will afford more knowledge of diseases of the tarsus than by any other means.

Before taking into consideration the diseases of the hock-joint, it may be instructive to take a glance at the structure of the parts, and likewise to offer a few comments on their function. The tarsus, or hock, is composed of six bones, the joint of ten bones, viz., astragalus, calcis, cuboid, cuneiform magnum, medium, and parvum; the tibia superiorly, and the three metatarsals inferiorly. On looking at the joint with its ten bones we cannot but consider it at once beautiful as well as complicated.

On the desk before me is the tarsus of a bay mare which was kicked on the tibia in the year 1858. She was twenty-five years old. I had known her since the year 1849. She was a very handsome well-bred animal, with extraordinary good action as a trotter, and perfectly sound, apparently. This case of fracture, with its peculiarities, was recorded in the *Veterinarian*, thirty-first volume, page 424, some little time after its occurrence.

* It may be supposed by those who have not read all my papers on "Soundness," that I should pass in review the diseases termed thoroughpin, bog and blood-spavin, &c. At pages 143—145, vol. xxxvii, of the *Veterinarian*, will be found my remarks upon these affections, under the head of "Enlarged Bursæ."

The calcis is a singularly shaped bone, articulating with the astragalus very extensively, and also with the cuboid superiorly. The astragalus articulates with the (in addition to the calcis and tibia) cuboid and cuneiform magnum; the cuneiform magnum with the medium, parvum, and cuboid; the cuboid with the two large cuneiform, the large metatarsal and one small metatarsal, also with the calcis. The small cuneiform bone articulates with the large cuneiform, and the large as well as one of the smaller metatarsal bones.

It will be seen that the joint, taking it as a whole, is a most extraordinary one. The articulating surfaces are many of them peculiar. There is no such articulation in the skeleton as that formed by the union of the inferior part of the tibia and the astragalus. This ginglymoid or hinge-like joint is particularly useful here, and it is owing to the extensiveness of its articulation that the examiner as to soundness is sometimes led astray. The articular surfaces of the several bones composing this joint are numerous, but extremely limited, and come under the class "*arthrodia*." Some of the surfaces, indeed most of them, are *mimic cup-like surfaces;* if held up to the light they will disclose the peculiarity hinted at. This it is which helps to confine or limit the movements of the different bones. The remarks made in reference to the *inner* small metacarpal bone apply here. The cuneiform parvum has but a slight connection with the metatarsal magnum. Most of the weight thrown upon the small cuneiform is directed upon the inner small metatarsal bone. There being a greater movement at this part is one of the reasons why bony matter is more frequently deposited than on the opposite or external side of the joint. It will be seen the articulating surface of the cuboid is far more extensive upon the large metatarsal than upon the small one; this is precisely the case in the carpus. A uniformity of structure in the skeleton is one great feature in it. It will not be forgotten that the outer small metatarsal bone is nearly double the size of the inner. The difference of length in the carpal and tarsal joints is worthy of observation. Measuring the superior part of the calcis down to the superior part of the large metatarsal, it is about five and a half inches; out of this, the astragalus takes for its articulating surface an inch and a half; and the distance, or length, between the inferior surface of the astragalus and upper portion of the metatarsal is exactly one inch. This refers to the dried specimen, of course. Comparing this, with the measurement of the carpus, we shall find much dis-

similarity. From the superior portion of the trapezium to the upper part of the large metacarpal bone, it measures exactly two inches; but the distance from the lower end of the radius and upper part of the metacarpal, is one inch and three quarters, whilst the distance from the tibia to the metatarsal is only one inch. Taking into consideration these differences of measurement, together with the arrangement and disposition of the bones, it will, I have no doubt, cause some reflection on the part of those who may read this paper.

My great aim in making these observations is not to advance opinions which are untenable and open to objection, but to cause those members of the profession (not partial to literature) to *think*, as they take their daily rides into the country. By thinking, we sometimes grapple with subjects which at first sight appear to be insurmountable.

In viewing the bones entering into the hock-joint we cannot avoid learning that there is a variety of movements performed by the several articulations, and that also there are several degrees. We have the ginglymoid, a very extensive one, which gives that freedom of action to the limb in admitting of the extraordinary extension and flexion during the trot, and other paces. This appears to be the one of greatest importance. Again, we note the peculiarity of the calcis and astragalus; the limits are restricted, but at most the concussion must be greater as produced by these two bones than by others. I should imagine the movements of the cuneiform bones with the two just named are of that peculiar gliding motion more easily conceived than described upon paper. The soft parts are not without their importance either. For a moment contemplate the attachment of the tendon of the gastrocnemius externus muscle, together with the plantaris, to the point of the calcis; then for an instant consider the connection the tendon of the internus muscle forms with its fellow. It is impossible to say what derangement of the bones would occur if they were not supported as they are by the soft parts. Viewing the limb either in a recent or dried state, we cannot avoid being struck with amazement at the wisdom displayed in its formation. The muscles employed to perform the various movements of the limb being situated at so great a distance from the joint, gives lightness, as well as freedom and beauty, to a well-formed hock. The natural bands or braces which keep the whole in their respective positions are beautifully adapted for their purposes. But we must not overlook the arrangement of the interarticular cartilages, which are so placed as to

prevent as much as possible that concussion which would inevitably take place in the absence of so good a set of cushions. In casting the eye down to the point of the *os calcis* we occasionally meet with a thickening of the integument, and sometimes a well-formed cap. There are many ways by which this is produced.

Some horses acquire the habit of standing across a stall, and they rub the points of the hock against the wall, which blemishes the parts more or less. Another source of evil is from uneasiness after lying down upon an uneven gravel stall. If either of these causes have been in operation the integument will have suffered, but only in a trifling degree. If the hock is really capped, then it may be wise to inquire as to the propensities of the animal—whether he or she is *light behind* in harness, or in the stable. Kicking will generally produce a capped hock. The same may be said of this as I have written of many other defects. It should not stop the sale as regards the soundness of the animal. If the horse is a kicker, under any circumstances it remains with the purchaser whether he will venture to become the owner of a vicious brute or not.

The next disease which is likely to meet the eye is "curb."

Some persons have a good deal to say about curb; others make but short work of it, and consider it of trifling import. I have seen some extraordinary-sized curbs, and have passed the animals sound-usefully, much to the astonishment of some wiseacres.

There appears to be much difference of opinion as to the pathology of curb.

The word "curb" appears to be derived from the French word *courbe;* it means *curve*, no doubt. This affection has been variously described. D'Arboval has described it as an *osseous* tumour. Solleysel has defined it to be a hard tumour, &c. &c. In order to explain what a curb is, we must first settle the question as to *when* the description commences; whether it be at the first moment it is discovered, that is, in its primitive or acute stage; or when it becomes chronic, and when the generality of horse-owners produce the patient for advice or treatment. It appears to me that this is the most legitimate way of dealing with the question. The dissection of the part will, I think, aid us in our description. The tendons of the gastrocnemii muscles are very peculiarly arranged. I need not, perhaps, state that the tendon of the external muscle becomes the internal, and *vice versâ.* (We require only to view the parts immediately below the os calcis.) In examining the recent specimen we

shall find the perforatus tendon immediately under the integument; its thickness is about three eighths of an inch. Connected as it is with its sheath and cellular tissue to the parts immediately anterior to this, there is a large development of *nerve-fibre running between the two tendons*. The perforans tendon is considerably thicker and stronger than its fellow. When we take into consideration that the perforans is running through a serous cavity, coupled with the fact of these parts being largely supplied with nerve-matter as well as sanguineous fluid, we need not wonder at "curbs," when once thrown out, being attended with much pain. A limb now upon my table is characterised by its blood supply to the perforans. The horse from which this specimen was taken died a few days ago, and much congestion of the vessels was manifested throughout the body. The perforans before alluded to displays a most beautiful arborescent appearance upon its posterior surface; indeed, until now, I was not aware that tendons were so bountifully supplied with the vital fluid. This specimen, therefore, will have the effect of throwing much light upon the effects—if not one of the exciting causes of lameness. We have here, then, in this case, a large store of nerve matter and blood to supply the parts with its peculiar power, sensation, and nutrition.

A "curb" may be defined to be an injury inflicted upon the fibrous material surrounding and connected with the flexor tendons below the hock-joint. The injury being produced by an extension or violence of those fibres, it generally follows that increased heat is an attendant, with much pain, depending, of course, upon the extent of the injury. We may, in other words, state that there is found inflammation of the sheaths of the tendons. No person will attempt to deny that acute inflammation is present if tumefaction takes place, and a large amount of serous or other fluid is extravasated; this is produced by rupture of some minute blood and other vessels, or by the speedy deposit of lymph or other matter into the surrounding textures. This tumefaction causes pressure upon the nerves of the part, and intense suffering is the result. I do not believe pain or lameness is ever present, unless there is considerable heat and swelling in the part.

The question now arises, whether a horse with curb is to be passed or not? This will, as I have frequently observed in these papers, depend upon circumstances. The precise character of the affection must be well considered, the stage in which the curb is found, and whether the animal is capable

of standing an ordinary and good test. We sometimes meet with horses showing the least possible curve at the seat of curb. These are cases which have not as yet been developed; indeed, it is so minute that the owner cannot be persuaded that there is any deviation from the straight line. It is astonishing how blind some people are when they are interested in *selling* an animal said to have defects; and, strange to say, their sight returns to them the moment they wish to purchase one. I can fully understand how difficult it is for the seller of a horse to believe his favorite has a curb, especially when it is very minute. There are, however, cases of this description, and it is only necessary that a careful and somewhat severe trial should be made of a horse with the appearances alluded to. I have been often told that my examinations are likely to produce lameness, and have more than once been abused for it. When any interference is offered on the part of the owner, or other persons interested, in having a horse passed, I at once throw up the case and refuse any further action in the matter. It is more than probable the examiner as to soundness does cause lameness in his patient. This is the object, or one of them, of putting a horse to the test of trial. If an animal has an infirmity about him, which will show itself during a trial, or soon after it, the examiner is fully justified in finding out that infirmity, even to the production of lameness; but he must take especial care that his examination is conducted in the *ordinary* manner, and in the presence of the owner or his agent, or unpleasantness may be the result. I can only say of curb, as I have done of many other defects—write a certificate of useful soundness, if satisfied that the animal is sound in that sense.

Having alluded to an examination taking place in the presence of the owner or his agent, as being at all times advisable, I will relate a case which occurred in my practice.

I may premise that I make it a rule never to handle a horse brought for examination until I have received instructions. This rule I made many years ago, and have rigidly adhered to it, and I have had no cause to alter that determination. A horse was purchased in the county Tipperary, by an English gentleman residing in Yorkshire, of another Englishman who was his friend. The animal was bought for eighty guineas, and it was agreed to send him to me at Waterford for examination. The horse was duly despatched per rail, in the care of the seller's groom, and arrived at my establishment in the evening, about nine o'clock. He was placed in a loose-box, being attended to by the gentleman's

servant, and left for the night. In the morning my foreman called my attention to this horse as I was going my rounds. He said that he was to be examined at eleven o'clock, and the gentlemen would be present. In a short time the groom entered the yard and spoke of the good qualities of the horse. I had seen him as I looked over the half door (it was in the month of July, which accounted for the top half of the door being open). I remarked that the horse did not look well, his coat stared, and he was lying down. The servant did not believe there could be anything the matter with him, as he was a good-constitutioned animal. The two gentlemen came at the hour named, and begged me to examine the horse. Preparations were made at once. The animal was taken to the usual place, and the examination commenced. When the horse walked through the yard I remarked how stiff he was, and when it was necessary for him to trot it was found he was *lame*. I said to the gentleman, "I know not which is the lamer leg of the four." On a further examination I discovered the horse had been injured in the *back* and *loins*, and upon inquiry I learned that he was uneasy in the horse-box on his way down; and upon one occasion fell, and was hung by the collar, and struggled violently to get up again. This was an unfortunate state of affairs. Some question arose as to whether I had had the horse out, knowing I was to examine him. My reply was to the effect that I never did and never would examine any animal without instructions.

If I had taken that horse out of the stable to see his action merely (as many persons are in the habit of doing), I should have been placed in a very awkward predicament. Having explained my system of conducting these examinations, the parties were, of course, satisfied. I would therefore strongly press this upon all young examiners—not to lay hand upon the horse of a client until they have received proper instructions.

Sometimes we meet with an animal having a curby hock. Is this to be considered an unsoundness? The shape of a horse, or part of the body, although it has much influence in the performance of certain feats of strength, is not to be considered in reference to soundness. If a purchaser makes, as some have done, a special clause or bargain that the examiner not only has to state whether the animal is sound, but he must give an opinion as to the probability of such and such a part giving way under certain kinds of work, then the examiner is in a fix. I do not believe it is a position a veterinary surgeon should be placed in, nor do I think it amounts to a question of soundness. A horse with a

peculiar formation may be well adapted for certain descriptions of labour, and, perhaps, perform that labour satisfactorily, but a purchaser may take a fancy to an animal utterly unfit for the business for which he is buying. I do not think, as before remarked, that this is a question of soundness. It is no uncommon thing to see a horse with a malformed limb, one very likely to come to grief the first time he is called upon to take a severe jump, yet we frequently see such animals doing strange things in the hunting field. I fancy horses, spring curbs by accident, more than by actual labour. To make myself plain or understood in this observation, I may remark, that, if a person makes a false step, either in the dark or otherwise, unconsciously, he is very likely to receive some injury to his foot or leg. There is an absence or want of preparation of the mind to perform the feat, and the person so situated certainly will come to harm. No doubt the same cause is in operation in our patients. A horse seldom comes to grief unless he makes a mistake, or is overtaken with a difficulty for which he is unprepared. I never in my life was hurt seriously when prepared for a jump, unless some mistake was made or some unforeseen obstacle fell in the way; but I have suffered much when unprepared, or, in other words, from accidents. We have to understand from this, that, as a general rule, curbs and other similar mishaps are likely to take place when an animal is unconscious of what he is about to do. In order to prove this assertion, it may be asked if, when a horse is galloped, cantered, trotted, or even walked, and pulled up suddenly, the act is not often productive of curb? I think I may venture to state it will produce "*curb*" sooner than anything else that the horseman may be found to do when mounted.

(*To be continued.*)

Facts and Observations.

Value of the Sewage of Towns.—The conclusions to which Messrs. Lanes and Gilbert have come from their investigations on this subject are as follow:

1. It is only by a liberal use of water that the refuse matters of large populations can be removed from their dwellings without nuisance and injury to health.

2. That the discharge of town sewage into rivers renders them unfit as a water supply to other towns, is destructive of their fish, causes deposits which injure their channels,

gives rise to emanations which are injurious to health, is a great waste of manurial matter, and should not be permitted.

3. That the proper mode of both utilising and purifying sewage is to apply it to land.

4. That, considering the great dilution of town sewage, its constant daily supply at all seasons, its greater amount in wet weather when the land can least bear, or least requires more water, and the cost of distribution, it is best fitted for application to grass, which alone can receive it the year round. It may, however, be occasionally applied with advantage to other crops within easy reach of the line of area laid down for the continuous application to grass.

5. That, having regard to both urban and rural interests, an application of about 5000 tons of sewage per acre per annum, to meadow or Italian rye-grass, would probably, in the majority of cases, prove to be the most profitable mode of utilisation, though the quantity would have to be reduced, provided experience showed that the water was not sufficiently purified; and it is pretty certain that the farmer would not pay $\frac{3}{4}d.$, and it is even very doubtful whether he could afford to pay $\frac{1}{2}d.$ per ton, the year round, for sewage of the average strength of that of the metropolis (excluding storm-water) delivered on his land.

6. That the direct result of the general application of town sewage to grass land would be an enormous increase in the production of milk, butter, cheese, and meat; whilst, by the consumption of the grass, a large amount of solid manure, applicable to arable land and to crops generally, would be produced.

7. That the cost or profit to a town of arrangements for the removal and utilisation of its sewage must vary very greatly, according to its position and to the character and levels of the land to be irrigated. Where the sewage can be conveyed by gravitation, and a sufficient tract of suitable land is available, the town may realise a profit; but, under contrary conditions, it may have to submit to a pecuniary sacrifice to secure the necessary sanitary advantages.

NITRO-GLYCERINE. — This explosive compound, likely soon to supersede the use of gunpowder and even gun-cotton, for blasting and mining purposes, and from which such sad and appalling consequences have arisen through the want of due precautions, was discovered by Sobrero, a pupil of M. Pelonze, in 1847, but, like many other things, for a considerable time attracted little notice. As its name implies, its constituents are nitric acid and glycerine ($C_3H_5O_3$, $3NO_5$).

From the weak affinity that binds the elements of these compounds together when thus united, almost any disturbing cause will cause the breaking of nitro-glycerine up, when it instantaneously and with uncontrollable energy assumes the gaseous form, the gases being neither deleterious nor disagreeable, nor is there any residue left; hence, were it not that there are certain objections otherwise to its employment, it would soon take the place of gunpowder for military purposes, as this last both fouls the gun and produces noxious gases. Nitro-glycerine is stated to be eight times as powerful as gunpowder, weight for weight; and thirteen times as powerful, bulk for bulk. It is formed by the action of a mixture of nitric and sulphuric acids, one volume of the former to two of the latter, at a low temperature on glycerine; this being added in successive portions, when three atoms of the nitric acid combine with one of the glycerine. Its sp. gr. is 1·6. It is insoluble in water, but dissolves in alcohol and ether. It freezes at about 40° F., and explodes at about 350°. Agitation, friction, and percussion, quickly cause it to explode, and there is no doubt it is liable to spontaneous combustion, and the gases evolved from it may cause the bursting of the vessels in which it is confined. Although so dangerous a compound, science has fortunately discovered a means to keep it, and thus prevent its force being expended when not required. M. Nobel, a Swedish chemist, has ascertained the fact, that by mixing it with methylated alcohol neither heat nor percussion will cause it to explode. It becomes dissolved in the alcohol, and it may be easily recovered from it, with its properties unimpaired, simply by the addition of water, which unites with the spirit and sets free the nitro-glycerine, which from its greater specific gravity falls to the bottom.

Trichina Disease.—Dr. Thudichum, in a paper describing a case of death from eating raw German sausages, comes to the following conclusions:—

That trichinæ can be imported in raw German sausages, and cause trichineasis in this country. That muscular encapsuled trichinæ can live thirty years. If strongly encapsuled they are, though living unquestionably, in most cases unable to withstand the powers of the stomach of various animals, and consequently but little capable of infecting those animals on which the trichina preys. Ordinarily, when encapsuled trichinæ are eaten by man or animals, the capsules are digested and the trichinæ are set free. They then pass into the intestines, and there propagate themselves very quickly. Each female produces about one thousand

young trichinæ in the course of a fortnight, and ushers them into the world alive, and quite prepared to eat their way to their final destination—the muscle. The young trichinæ immediately pierce the intestinal walls, and obtain access to all the tissues of the abdomen. The greater number penetrate directly into the blood-vessels, or indirectly into them through the lymphatics, entering the circulation with the chyle. On the seventh day after an animal has taken trichinous meat the young trichinæ are found in all the tissues. In the case reported by Dr. Thudichum (that of a German fifty-eight years of age), he calculates the number of worms contained in the body of this man at about 40,000,000. A microscopic specimen of the flesh would frequently show upwards of fifty of these capsules, and there were parts where the muscle seemed to consist of almost nothing but such capsules.

Change effected in Barley during Malting.—The following table, from the report of the recent experiments performed by Mr. J. B. Lawes, shows the proportionate changes the constituents of barley undergo during the malting process.

	Barley before steeping.	Growing.					Screened malt.	Malt dust.
		As thrown from the couch.	4¼ days on the floor.	8 days on the floor.	12½ days on the floor.	14 days on the floor.		
Sugar . . .	2·56	1·56	8·16	10·19	11·67	12·14	11·01	11·35
Starch (and dextrine) . . .	80·42	81·12	74·72	72·16	70·73	70·09	72·03	43·68
Woody fibre . .	4·69	5·22	4·96	5·18	4·98	5·03	4·84	9·67
Albuminous matters	9·83	9·83	8·89	10·14	10·27	10·39	9·95	26·90
Mineral matters	2·50	2·27	2·27	2·33	2·35	2·35	2·17	8·40
	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

The result of Mr. Lawes' experiments is, "that a given weight of barley is more productive both of the milk of cows and of the increase of live-weight of fattening animals, than the amount of malt and malt-dust that could be produced from it." A conclusion before arrived at by Messrs. Thompson in 1845 and 1846, who experimented only on two cows, Mr. Lawes on ten.

THE VETERINARIAN, SEPTEMBER 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

ON MIND-PROGRESS.

Not in anything at the present day is mind-progress more notably evidenced than in the triumphs achieved over matter by the employment of the physical forces. Thus, by the aid of electricity, which transmits his thoughts with the rapidity of lightning, man holds free converse with his fellow-man; he paints with the sunbeam, obtaining correctness as well as beauty; the power of the air has been applied by him, and made subservient to his wants and wishes; whilst by the vapour of water he is conveyed over land and sea with a speed equal to that of the wind, and which would have alarmed our forefathers, since mountains are now no obstacles, nor adverse winds or currents, to the quick passing of the locomotive engine. In all this we perceive the advantages derived from knowledge, and also that the powers of the mind are asserting their rightful and their destined sovereignty over the material world. With truth it may be said, it is something wonderful to think of all that science of late years has accomplished, it being far beyond what was ever thought of or considered attainable. With untiring wing she is ever seeking for fresh fields to investigate, and new realms to conquer. Both labour and time are economised; by her the comforts as well as the necessaries of life are increased, and the happiness and usefulness of man augmented. Wisely, then, has it been urged to yoke into our service the laws and forces of physical nature, so far as their subserviency is really beneficial to our welfare and our progress, since they are not hostile powers, but auxiliaries ordained by the Creator of the universe for man's good; nevertheless they are to be sought out and applied by mind-labour, with which power man has been endowed. Possibly there was never a time when so general

and wide-spread an activity prevailed in all departments of human progress. An eloquent divine recently said, "We regard with fervent admiration those triumphs of the scientific intellect which will invest the last fifty years in the history of this country with splendour, different in kind from that which rests upon the Elizabethan age, but neither less lasting nor less glorious. We acknowledge that but for the scientific discoveries which the present generation has seen applied to the arts of life, the stability and grandeur of this country would be threatened with early decay, and all moral and religious interests which are involved in the prosperity and power of the English nation seriously imperilled. To us, the illustrious students of nature are ministers of God and benefactors of mankind. Without the rapture of inspiration they are prophets who interpret to us the laws by which God orders his physical creation; they are priests, by whose service and mediation rich and innumerable blessings, which it has ever been in the heart of God to grant, are actually obtained for the relief of human suffering, the increase of human happiness, and the general elevation and improvement of the condition of our race. As yet these brilliant triumphs over the mysteries and powers of the physical universe are only just beginning, and we seem to be on the very edge of great discoveries, the ultimate influence of which, on the thought and progress of mankind, it is impossible to anticipate."

Some persons have thought that the intellectual fibre of the present generation is less muscular than that of our forefathers; hence the tendency to deal with things of seemingly minor importance, to dilate upon trifles so-called. It must be conceded that the law of investigation is carried to an extreme minuteness now-a-days; but surely there is as much sublimity and far more beauty in the scales on a butterfly's wing, or the engravings on the siliceous coverings of the diatomaceæ, than in the somewhat repulsive form of the alligator or the unwieldy elephant, although each alike gives proof of wisdom and design. And has not science likewise been found instrumental in effecting *general* good? The proofs of this are so many, that the

difficulty lies in selection. Let the following suffice. By her aid the benefits resulting from ventilation are secured; the fetid and poisonous gas is rendered odourless and innocuous, and the advantages of drainage shown, not only in respect to our dwellings, and the prevention of disease, but in the application of sewage to the soil, whence we derive our sustenance and support.

But perhaps in no division of science is mind-progress more markedly seen than in medicine, and especially as this is connected with chemistry. Indeed, it may be said that the future of medicine and physiology lies in an extended study of chemistry. "If," says Lehmann, "the final result of all physiologico-chemical inquiries be that of comprehending the chemical phenomena of animal life in their different phases, and their causal connections, it is obvious that we must look to this science for a solution of the most important questions of physiology and medicine generally." And again: "When we turn to practical physiology, to pathology, and therapeutics, we are again reminded that chemistry is indispensable. Is there a single disease that is not attended by chemical changes? Can we ever hope to comprehend or explain the nature of any process if we are ignorant of its integral factors? Life cannot exist without chemical movements; disease cannot exist without chemical changes. Thus much in reference to pathology; while in respect to therapeutics it is almost superfluous to observe that chemistry here also plays the principal part; for where has modern pharmacology sought its chief support but in chemical processes and principles? And if we have advanced so far towards a clear insight as no longer to ascribe supernatural forces to medicine, but to derive their efficiency specially from chemical properties, then must chemistry be the supporting basis of pharmacology." We have been led to quote this testimony from such an eminent authority by the belief that the teaching of chemistry in its special relations to physiology, pathology, and therapeutics is somewhat neglected in our schools, and in the hopes of awakening in those concerned a greater sense of its importance.

On all sides, by the dissemination of right principles, we perceive corresponding advantages to result. And this will go on, for the mind cannot be checked; whilst it is but the prelude to a yet brighter and more glorious age. 'Tis only the beginning of the end.

If it be objected that the age in which we live is a rapid one, and we move at an electric speed; this is better than stagnation, for velocity is exciting. And if the present time be stimulating, it is also enterprising and energetic, full of bold schemes and startling revolutions. Thus, as it has been already hinted, "If you want your likeness taken, the sun will do it in a twinkling; if you want to travel, instead of footing the weary miles, you shall be projected through a tube, or, along the glossy path of polished iron, gleam like an arrow to the mark, although that mark may be far across the cloud-capped hills, or deep in the distant morrow. Do you want tidings of an absent friend? the globe is fast becoming one mighty nervous system, with a thousand million heads, one vast network of universal eye and ear, telling to each separate sensorium what is transpiring at every spot between the burning tropic and the frozen seas. And with rocks pouring out oil, with dull earths burnished into silvery metal, or blazing off in sun-like splendour; with oceans bridged and lightnings tamed, it is not wonderful that the age should grow giddy as it spins along, or talk a little wildly as the whirling fever mounts into its brain." Thus science may be said to be almost laying open the secrets of nature. The astronomer with his telescope shows us how small a speck our globe is in the universe, and the microscopist demonstrates the existence of a world in a particle of matter, or a drop of water; while the chemist proves how few elements go to make up the vast variety of forms and things around us.

Among the generalizations of science it has been conceived that the physical forces, so called, are but one, a conservation of force, centered in points of space, not in points of matter, and further, they are convertible the one into the other. The cause of them has been thought to be a "luminiferous ether" pervading space, the existence of

which was even implied in the Mosaic cosmogony. Thus the Hebrew original has it, "in the beginning God created the *essence* of the heavens and the *essence* of the earth." Of this marvellous substance light, heat, and electricity, are the phenomena, just as attraction, specific gravity, and impenetrability, are the phenomena of matter. Even vital phenomena, so little understood, but respecting which so much has been written, have been assigned to the same cause; and Newton, in his 'Principia,' adverting to it, says, "It has the property of warming bodies, exciting sensation, and moving the limbs of animals at will, through its vibrations propagated through the nerves to the brain, and from the brain to the muscles."

This correlation of the forces is a subject so full of interest that we may be induced to advert to it again.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

A Manual of Materia Medica and Therapeutics. By J. Forbes Royle, M.D., F.R.S., and Frederick W. Headland, M.D., B.A., F.L.S. Fourth edition. London: John Churchill and Sons.

The publishers of 'Royle's Manual of Materia Medica and Therapeutics,' in issuing a fourth edition of this useful book, have obtained the editorial services of a gentleman eminent for his prize essay 'On the Action of Medicines,' namely, Dr. F. W. Headland, and who is also known to be well acquainted with the various branches of scientific medicine. The result is, as might have been anticipated, that the new edition of Royle to which we are now directing attention, has been subjected to a revision which renders it a trustworthy exponent of modern chemistry, botany, pharmacy, &c., in relation to "the substances and agents which are employed as remedies for the relief or cure of disease." The plan adopted by Royle, and adhered to by the editor, has been to

classify the agents which they describe according to their natural history relations. Thus, after devoting twenty pages to "Introduction," "Operations of the Pharmacy," and "Pharmaceutical Chemistry," materia medica proper is treated as follows:

"Mineral Materia Medica.—Proceeding from the non-metallic elements to the metals, with their history, physical and chemical properties, preparations, tests, action, uses, and doses.

Vegetable Materia Medica. *Introductory.*—Parts of plants; classification, physiology, and geography of plants; medicinal properties of natural families; the collection and drying of vegetables. . . . . *Medicinal plants from Ranunculaceæ to Fungi.*—According to the system of De Candolle, with a notice of the properties of the natural family; description of the officinal plant; physical and chemical properties of the plants used; preparations; actions; uses and doses; *products of fermentation; fossil vegetable products.*

Animal Materia Medica, from Porifera to Mammalia."

—To any one experienced in teaching materia medica, or to the student who has made himself acquainted with the methods of treating that subject adopted by various authors, the arrangement of Royle, which is likewise that of Pereira, possesses great advantages over all others, inasmuch as it excites and promotes the all-important power of generalisation, and evidences the value of order and system in imparting and acquiring knowledge.

The work contains a great number of excellent wood-cuts, illustrating chemical apparatus, but more particularly the crystalline shapes of substances and the botanical forms of medicinal plants. Royle and Headland's 'Manual' is essentially a student's book; and it is one which, in conjunction with the very useful 'Veterinary Pharmacy' of Professor Morton, we cordialy recommend to the notice of students of veterinary medicine, as being the best aids to the acquirement of a scientific and practical knowledge of materia medica.

A Manual of Practical Therapeutics; considered chiefly with Reference to Articles of the Materia Medica. By Edward John Waring, F.R.C.S., F.L.S., Surgeon in Her Majesty's Indian Army. Second edition. London: John Churchill and Sons.

This manual is divided into two parts. The first part is

devoted to an *individual* description of the medicinal properties, actions, officinal preparations, doses, incompatibles, and therapeutic uses of the articles of the materia medica. The composition, botanical relations, and the other matters of a like nature, fully described in works on pharmacy and materia medica, are but very briefly dwelt upon by Mr. Waring, but, in accordance with the title of his book, he relates, at considerable length, the therapeutic actions and applications of the agents employed in the cure of disease. Each malady for which a remedy is recommended has a separate heading, so that the practitioner has only to refer to the copious and valuable "Index of Diseases" in order to be readily informed of the medicines he should prescribe, of their mode of action, and of the precautions to be observed in their administration. Two additionally important features of the work are that it contains the experiences and opinions of various authorities on every subject treated, and that almost every page abounds with foot-note references to the original writings of the authors quoted.

In the second part therapeutic agents are chiefly arranged according to the similarity of their modes of action. Thus we here find medicines classified as alteratives, astringents, blisters, cathartics, &c., and a *general* description of their effects and utility.

Those who have read the preceding notice of Royle's materia medica will have seen that we extolled the natural system adopted by its author as being best suited to the wants of students who are required to obtain a scientific knowledge of the chemicals and drugs they will hereafter be called upon to prescribe. Mr. Waring has adopted the alphabetical system of classification. He commences the first part of his work with "Absinthium," and ends with "Zingiber officinale." The second part begins with "Acids," and terminates with "Water." This arrangement is devoid of the scientific character which we regard as being of so much importance to the student; but, on the other hand, it is a plan which is looked upon with considerable favour by medical practitioners, as it enables them, in the event of failure of memory, to readily obtain information respecting the properties, uses, doses, &c., of medicines, and quickly to ascertain the remedies to be used in the restoration to health of their patients. In taking leave of Mr. Waring's "Manual" we express our belief that not only will it be found useful as an aid to the memory, but that its careful perusal and study will well repay the medical reader, no matter whether men or the lower animals be the patients committed to his charge.

Extracts from British and Foreign Journals.

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

(*Continued from* p. 673.)

In a previous article we pointed out that there were three great classes of ingredients in food, (1) the nitrogenous ingredients, popularly called "flesh-formers," (2) the non-nitrogenous substances, such as fat and starch, popularly termed "heat-givers," and (3) mineral ingredients. We accepted, as sufficient for scientific as well as for practical purposes, these great generalisations of Liebig. In doing so, it is fair to tell the reader that certain physiologists will consider that we are not up to the present state of knowledge, and that we ought to abandon such divisions, "because flesh-formers may not always form flesh, and may sometimes serve as heat-givers, and that both must co-operate in nutrition." But we have already warned the reader that nature requires an admixture of all the classes of aliments in perfect nutrition. This picking to pieces a grand connected classification is not new in the history of the eminent German chemist to whom science owes so much. When he wrote on agriculture, his broad conceptions were misunderstood, and small interpolations were supposed to disconnect or to destroy them, till at length an eminent farmer, the late Mr. Pusey, told us that the only thing which science had done for agriculture was to show "that nitrogen was the food for wheat and phosphorus for turnips." This picking out of two elements from twelve, every one of which was equally necessary to the growth of the plants, was such a singular misapprehension of scientific teaching, that the author of the present paper then remonstrated in the following terms:—"This is a strange retrograde step in agriculture, when one of its most eminent cultivators, and editor of the *Journal of the English Agricultural Society*, commends the notion of specifics in the practice of his art. What would be thought of a like dogma in animal physiology? Because the Arab in his desert has little fat and therefore more nitrogenous tissue or flesh; because a Highlander is large-boned, and therefore abounds in phosphate of lime; would it be permitted to pick out the two single elements—nitrogen and phosphorus—from food, and give as a practical

dictum, like that announced by Mr. Pusey for agriculture, that nitrogen is the food for an Arab, and phosphorus is the food for a Highlander!" But this illustration, which was taken on account of its absurdity, has now become almost a reality in the writings of some of our distinguished physiologists. Because they find that portions of each of the classes of alimentary ingredients may pass undigested through the system, they tremble to call them of necessity "flesh-formers" or "heat-givers;" because the first class may, and in fact do, under certain circumstances, act in developing heat, and because the heat-givers must co-operate with nitrogenous substances in building up the body, a due proportion of both being essential for the support of life, they abandon the generalisation, and look only to the amount of two elements, carbon and nitrogen, neglecting every other element in food, in the absence of one of which full nutrition would be impossible. To deny that the nitrogenous constituents of food are the flesh-formers for such reasons is like saying that bricks are not made of clay, because water and coal are also necessary for their production. This looking to detail and losing the great whole, is neither new to common life nor to science. A man may pass through a city without seeing it, on account of the separate houses, or he may miss the forest from the multitude of its trees. To some the fine proportions and adornment of a noble edifice are lost, though the size and material of the individual stones may have been observed. So some physiologists have tried to upset a beautiful generalisation by presenting difficulties which have only existence in a limited understanding of it. It is not asserted by chemists that each of the three divisions of food can act in its own way without mutual co-operation. Flesh could not be made by the nitrogenous ingredients of food, unless the heat-givers and mineral ingredients were at the same time aiding it in the work, nor could the two latter be of use in nutrition unless the former were in active co-operation. If they are not well adjusted and taken in proper quantity, some part of them may pass through the system unused. The beauty and truth of the great classification of the ingredients of food is not weakened but strengthened by such facts. We shall adhere, therefore, to the threefold division of food, asserting that the nitrogenous materials are essentially the builders up of the organs of the body, when aided by mineral ingredients, and in co-operation with the non-nitrogenous substances, which have their separate but connected duties to perform in the support of respiration and consequently of heat.

(*To be continued.*)

THE CATTLE PLAGUE.

By Howard Reed.

(*Continued from* p. 679.)

The Origin of the Cattle Plague.—We will first attempt to ascertain the bearings of opinion on this part of the subject.

Professor Simonds was, I believe, the first who ventured to affirm that the disorder he was called upon to inspect at Islington, Hackney, and Lambeth, was imported from Russia. He was joined by Professors Spooner and Gamgee, who, having shown that cows bought at the Metropolitan Market at the same time had introduced the disease to these dairies, seized upon the Revel cargo as the direct means of its communication from Russia to the Metropolitan Market. This explanation, which was generally considered to clear up every doubt as to the origin and nature of the epidemic, is said to have broken down under the analysis of the Commission, though not exactly for the reason assigned by Dr. Playfair, who, in a treatise on 'The Cattle Plague,' arbitrarily fixes the period of incubation at eight days (it extends often to twenty-one days), and then infers that because the cattle were nine days on the passage, and reached London without visible signs of disease, the disease could not have come in that cargo. Relinquishing this, there is no direct evidence whatever remaining of foreign extract. Where proof is impossible, dogmatism is rampant. Professor Simonds asserted that it must have come from Russia. Professor Gamgee publicly announced, "This cattle plague could no more have spontaneously generated itself in England than the mud in London streets can turn into living creatures." The veterinary surgeons having been for some time warned to look for its appearance, at once concluded without question that the virus had been imported. There was a general disposition on the part of the public to adopt the same view, which was carefully fostered by the London dairymen, who were anxious about certain unpleasant inquiries into the state of metropolitan cowhouses. When the Revel story was disposed of, inquiry elicited that Hungarian cattle did introduce the plague to Utrecht, in Holland, last May—that the first beasts found to be afflicted with it in London were newly-bought

Dutch cows—and that by this bridge the pest may have passed into England.

Confining my attention solely to the origin of the present outbreak, I do not find it at all impossible to believe that, after all, the Revel cargo did introduce the plague to this country. Possibly, also, it may have come by way of Holland. I should not be at all surprised if the Revel beasts brought the contagion to our cattle, and escaped the consequences of it themselves. The septic germs of disease choose their own time for development. They resemble the seeds of vegetation, which await the arrival of a specific degree of heat, and will not germinate before the minimum be attained. It is so with the miasmata of smallpox, and measles, and scarlatina, which lie dormant for weeks, and months, and years, springing up again under favorable circumstances. Thus the diseases of the mother country are conveyed across the ocean to the colonies, in ships that exhibit clean bills of health. If it be true that cattle passing through a furnace which, let it be remembered, is far less fiery in Russia than in this country, enjoy an immunity evermore, and that cows in calf purchase in the same way an immunity for their progeny, it is not difficult to believe that a cargo rendered thus incombustible could bring fire to our shores without suffering themselves from its consuming effects. Moreover, the body of an animal exposed to the ferment may not be in a state to develop it, but yet coming from a district saturated with contagion may convey it clinging to the hair. Seeing that the rinderpest never dies out in the Steppe country, and that it does die out in other countries to which it occasionally gains access, there is reason in assigning Russia as its natural abode. But it must be remembered that in order to set up a disease two causes are necessary—the exciting cause and the predisposing. It exists permanently in the Steppes, because both these are permanently present. Were both permanently present in England, would it not find a constant abode here?

Symptoms.—These divide themselves iuto *External* and *Internal.*

The *External* symptoms, as stated in the Order in Council of 11th of August, 1865, are as follows:

"Great depression of the vital powers, frequent shivering, staggering gait, cold extremities, quick and short breathing, drooping head, reddened eyes, with a discharge from them, and also from the nostrils, of a mucous nature, raw-looking places on the inner side of the lips and roof of the mouth, diarrhœa, or dysenteric purging."

Dr. Andrew Smart's minute observations of the phases through which organisms smitten with the plague usually pass, having been gathered from a wide field, are of unusual importance. I extract from his 'Second Interim Report to the Provost and Magistrates of Edinburgh:'

1. *Period of Incubation.*—All my observations lead me to conclude that it terminates on the seventh day, by the outward manifestations of distinctly recognisable indications. These are—

2. *The Earliest Recognisable Symptoms.*—They are enumerated as nearly as possible in the order in which they appear. 1. Loss of appetite. This shows itself (1) by an aversion to all sorts of "green food." The next day, or the following, there is (2) indifference to food of any kind. The animal still eats, but languidly; does not lick out the pail, or leaves a portion of the meal, and soon after refuses food altogether. It now ceases to chew the cud, and from this time there is commencing constipation, with progressive diminution of milk. The animal looks depressed, stands much in the same posture, with drooping head and reclining ears. The ears, horns, and other extremities are now sensibly under their natural temperature. The breathing is yet but slightly accelerated, and the expiration perceptibly prolonged, and the pulse rises a few beats in frequency. It is at this period the orifice of the vagina reddens, and the colour deepens as the disease advances. This appearance of the vulva is the most characteristic and reliable mark of the disease at this stage. A faint-red or purple line about the same time appears on the under gum, and along the roots of the teeth. All these symptoms occur within a day or two of the incubation period. The diseased condition of the internal organs after death clearly points to this and the preceding period of the disease as the proper time for successful treatment, before destructive changes have too far advanced.

3. *More advanced Symptoms.*—The breathing is now more accelerated, oppressed, sighing, and laborious. The number of respirations varies generally from 36 to 70 per minute. The pulse is more rapid (from 60 to 110 pulsations per minute), and weaker. There is continued loss of appetite, constipation, and thirst. The superficial membrane of the mouth, especially of the inner side of the under lip, roughens, and a viscid discharge appears in the vagina. A similar eruptive or roughened appearance is seen on the membrane of the vagina, where it joins the skin. The milk is scanty, and entirely changed to cream, or there is none at all. All the other symptoms are more decidedly pronounced.

4. *Most advanced Symptoms.*—They are those which shortly precede death, and are unattended by any very marked outward signs of pain. The breathing is now slow, very laborious, and moaning or grunting. Pulse slow and small. Where purgatives have not been given, there is great distension of the abdomen, and obstinate constipation. The fluid, and sometimes sanguineous discharges from the bowels, which occur in some cases, are the results generally of the too frequent use of irritant drugs. The superficial membrane of the mouth peels off from the gums and lips, leaving the surface raw; and frequently, but not invariably, there is a viscid discharge from the eyes, nostrils, and vagina.

In pure and uncomplicated examples of rinderpest there is no cough.

(*To be continued.*)

WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

ON "SEEDY FOOT."

By Mr. T. D. Broad, M.R.C.V.S., Bath.

Read at the late Meeting of the West of England Veterinary Medical Association.

"Seedy toe" is the term commonly employed to designate this disease; but as other parts of the foot are often affected, independent of the toe, I think it more proper to name it *seedy foot*. It is a disease which affects all classes of horses, from the dray horse to the smallest pony; also in the donkey I have seen several cases. The carriage horse is the most frequent subject of this disease; the hind feet are liable to it, but the fore feet are most commonly affected. Veterinary surgeons who pay attention to the shoeing department, or who are in the habit of carefully examining horses as to soundness, frequently meet with this disease, in all its various stages.

There has been very little written on the subject, the late Mr. Percivall being the only person who has given any description of it, and he honestly confesses his inability to offer any very satisfactory explanation of the various phenomena concomitant with the disease. Veterinary surgeons indeed generally appear to have paid but little attention to it. I have asked the opinion of a great many respecting it, amongst whom have been the most eminent men in London and other large towns, also the professors at Alfort and the principal practitioners of Paris, not one of whom has given me a clear and satisfactory answer as to the cause of the disease; and even amongst those who have studied it there appears to be a great difference of opinion—some believing it to be referable to the presence of animalculæ (the French term for the disease being *fourmilliére*, from its resemblance to a mass of ants), others are of opinion that it is the result of pricks from shoeing, or from pressure from the nails being too large or driven too close to the sensitive part, or from pressure of the shoe, or from the application of the shoe when hot, or from concussion from hammering it on the foot, or from the toe clip; the last stated cause appearing by far the most probable. But if such was really the cause, we should expect to find the disease much more frequently in dray and cart horses' feet from the immense clips they have to their shoes, and the amount of hammering they frequently get to set them in their place than others. Standing on a dry or sandy soil was said by the late Mr. Kent of Bristol to be a cause.

In my opinion, not one of the above-mentioned causes is the true one, for during thirty-six years' experience in the shoeing of horses I never knew seedy foot to result from a prick, or from direct injury

to the foot connected with shoeing. Dry and shelly hoofs are said to be one of the predisposing causes; experience, however, has taught me that this is a kind of hoof which is but seldom affected; and when it is to any considerable extent, it is much more difficult to cure, while from the slow and sparing way in which the horn is formed in such feet, it has greater tendency to a recurrence.

The principal cause is concussion, produced by high action, or heavy hammering action not necessarily high; and more especially if it be a hilly and slippery road over which the animal works. In proof of this I have known many cases of seedy feet begin to improve immediately after being taken from hilly work to work on flat ground. A great many of the Bath coachmen will have calkins to the fore shoes, stating as a reason that they cannot keep the horses on their feet without them. Calkins to the fore shoes are very injurious to the feet of any horse, as they tend to produce corns and disease of the laminæ, also navicular disease. In the dray or heavy class of horses, high calkins and knobs at the toes of the shoes tend to produce the disease by throwing the weight unevenly over the feet; and more so, if the work is heavy and over hilly and slippery ground, as the animal is then obliged to dig his toes into the ground to get a hold, whereby considerable concussion is produced.

Pathology.—Concussion produces congestion and subsequent inflammation of some particular part of the vascular laminæ near the edge of the coffin bone, the extent of the disease depending upon the exciting cause, or whether the cause is still in operation. The appearance may be very slight, amounting only to a small space at the edge of the sole, not larger than the half of a fourpenny piece, of imperfectly formed horn, differing in colour and texture from the surrounding sole, being of a slightly tinged yellow colour. After cutting that part away, the foot may appear quite sound and without any excavation; or, on the other hand, it may be the means of exposing to view a deep and extensive hollow place, without there being any indications of the disease on an examination of the foot by tapping or any other means, except on taking off the shoe and paring the foot. The disease does not always show itself at the toe, it may be in the extreme point of the heel, away from any nail or clip. I have several times seen the inside quarter of the fore foot affected, when the horses have been shod with unilateral or one side nailing, and the inside half of the shoe being made much thicker to prevent speedy cutting, thereby causing an uneven pressure and consequently a greater amount of concussion than a plain shoe would; the high action of the animal also assisting in producing it. From the specimens exhibited, showing the various stages of this disease, you will notice that the primary effect of the inflammation is to produce an increased growth of the horny laminæ, as well as the vascular laminæ, constituting hypertrophy, which extends to the wall if the disease has existed any length of time; in addition to which there is a large amount of exudation, from the horn secreting vessels or cells of the vascular laminæ, thereby caus-

ing a partial dislocation or separation of the horny laminæ from the vascular laminæ, and an exudation all through to the outside of the horny laminæ (not between the sensitive and horny laminæ, which fact was pointed out at our last meeting by Mr. Thomas Greaves of Manchester). The exudation, from not being supplied by nutrient vessels, becomes dried up, and constitutes that fine horny powder which has given rise to the name of the disease; at the same time it causes a hollow or separation between the horny laminæ and the wall.

The disease may exist in an incipient state for months unknown to the owner, or farrier who shoes the animal, unless either of them happens to belong to the old school, which insists upon the sole being cut out thin every time the horse is shod.

Symptoms.—Lameness is a very common result of this disease. I have in several cases, on its first discovery, found a small quantity of imperfectly formed pus to exist, which is caused by the inflammation assuming a more active character, consequently lymph is exuded and pus formed. In such cases the poor farrier is generally charged by the owner with having pricked the foot in shoeing. A few such instances have come under my notice. I have known horses with well formed feet to go tenderly for several weeks before any appearance of seediness showed itself. Such cases are rather puzzling to the young practitioner.

There is one sign which ought always to be noticed in obscure cases of foot lameness, namely, the shoe. If the animal has been lame, or going tenderly from disease of the laminæ for any length of time, the shoe will show that the horse has been working on the heels to prevent concussion to the toe; the extent of the wear of the heels of the shoe will give an idea of the extent of the disease.

I have stated that every class of horse is liable to this disease; and I may also state that every kind of foot is subject to it, since it affects feet of the most perfect shape, but the foot most liable to it is one which is strong and rather flat. As I have before stated, thin, weak, or dry, and shelly feet, are seldom affected, which may be accounted for in a measure from our knowing that such horses do not generally possess high action, which is one of the great exciting causes. I may here notice a simple fact in reference to the structure of the wall, which I have not seen recorded in any work. If you take a white foot, which will show it better than a dark one, and examine it on the outside with a common magnifying glass, under a good light, or when the direct rays of the sun are shining upon it, you will see that the laminæ extend through its entire substance, showing that the wall is composed of dense layers of laminæ.

Treatment.—If the case is only slight, and situated at the toe, cut it well out, lower the crust opposite the affected part so that it does not get any bearing on the shoe, remove the toe clip, and put one on each side of the toe away from the diseased part, shoe with leather, putting some tar dressing with tow underneath. In cases where the disease has extended high up, or over a considerable

space, it will be a question for the owner whether he will go to the expense of still keeping the horse during the length of time which is necessary for the wall to grow down sound, as this will take from four to nine months after being well taken off, which must be done very carefully, for if there is the slightest hollow or underrun place left not cut away, the horn will again grow down hollow and unsound, so that it would be an entire loss of time and expense; but if properly done, and the foot examined once a fortnight, so as to cut away any part which may be necessary to get the foot into a proper shape, you will then have a sound foot, and probably better than it was before the disease showed itself. In taking off the separated horn it is necessary to be careful with the knife, as in some cases the layer of horn covering the vascular laminæ is very thin and easily wounded, causing pain, and sometimes troublesome granulations; the bleeding also interferes with the operation.

After the diseased parts have been taken off, apply a blister to the coronet, and continue repeating it until the hoof has grown down sound; also apply several times daily to the hoof two parts of fish oil to one part of oil of tar, which stimulates and increases the growth of horn; and let the horse stand on wet clay several hours in the day.

I have many times removed all the hoof from one foot with the exception of a little sound horn at the heels, and a considerable portion of two or three of the other feet, and yet after from six to nine months the feet have grown down sound, and without any dropping of the sole or indication that they were ever affected. I have for years past observed that with light work, and careful shoeing, horses whose soles are slightly dropped, independent of seedy disease, will quite recover, and the coffin-bone resume its natural position. It used to be said that if the sole were sunken, the bone could not recover its natural position, but such is not the fact. Should the horse be of little value, I would not advise the hollow and separated parts to be taken off; but if the disease is extensive, put on a bar shoe made very thick and broad in the web, the heel part of the shoe to be much thinner than the toe, so as to allow the horse to tread back on it, and prevent concussion to the toe. If the disease has not advanced sufficiently to require a bar shoe, make a plain shoe upon the same principle, as I find that horses suffering from diseases of the laminæ always go better in very heavy shoes, the great point being to have them thin at the heels. Whether a bar or plain shoe is used always interpose leather. I have several horses under my care whose feet are so hollow, and the horn so separated, that it would be quite impossible to work them with a light shoe on. As regards the hollow or separated part, stop it up at each shoeing with the tar dressing that is used with the leather sole. It is often asked by the owner of the horse, if there is any probability of the disease recurring? My answer is, that there is not any more liability then than there was before it appeared, particularly if you take the precaution to have the horse shod with leather. Occasionally very hollow feet will take on healthy action

and grow down quite sound, without the separated parts being cut off, except it be at the time of shoeing, notwithstanding the horse continues to work. I attend now a gentleman's carriage horse, which has had the disease for the last seven years, during which time all the feet have been affected, and yet he has never been out of work for more than a day or two at a time, arising from lameness. The feet are very hollow, and there are always two of them affected, and sometimes all four. Occasionally, one or two of them will take on healthy action and grow down nearly sound; after which the nearly sound feet will again take on diseased action, and become hollow. That change has occurred to all the feet. He was a fine-actioned horse, and is now when the fore feet are right; he works over very hilly ground, and is a very free-working horse.

From three to four years since I examined a seven-year's-old bay carriage gelding, belonging to Capt. Conolly, which had the disease in the two fore feet and one hind foot. He had been a fine-actioned horse, but for months had been gradually losing his action, until at last he became so lame that he could scarcely walk. I found the coffin-bone of the near fore foot so much sunken, and the separation of horn so extensive, that when I had taken it all off there was only a small portion of the wall left at the point of the heels. The other feet were not nearly so much diseased. I had him placed in a loose box on soft litter, applied the oil of tar dressing to the feet two or three times daily, blistered the coronets, and after a short time made him stand, several hours daily, on wet clay. He was not taken up until after the horn had entirely grown down sound, which was in about nine months, although he might have been worked earlier if the owner had wished it. The horse has been working from that time up to the present without showing any symptom of lameness or disease, or altered structure of the feet. He has also recovered his fine action. Were it necessary I could relate many such successful cases. Occasionally, however, one will prove to the contrary, as the following from my note-book shows:—I have this day, April 18th, examined at my forge the fore-feet of an eight-year's-old grey carriage horse, belonging to a surgeon. Last summer this horse's feet were extensively diseased, one more especially; they were naturally thin, brittle and shelly, so much so that it was a question about four years since whether he should be purchased. Eight or nine months ago I took off all the diseased horny parts, and kept him standing on sawdust, in a loose box, for four or five months, at the end of which time the feet were quite sound, and of a better shape than I had ever seen them. The horse has now been working about three months. A few days since his owner was speaking to me of the excellent cure I had made; but from my examination to-day I am sorry to find that both feet are considerably affected at the toes, notwithstanding his having been shod with leather, and tar dressing daily applied to the feet.

While treating of disease of the laminæ, permit me to state that for some years past I have adopted a somewhat novel course of

treatment of laminitis, when that disease has not been the result of over-exertion or metastasis; and more cases have come under my notice from plethora, combined with the want of exercise, and from indigestion, than from any other cause. I will relate a case which will show the treatment I adopt. About three years and a half since I went to J. J. Bush's, Esq., at Hilperton, to give an opinion respecting an aged cob, which was very fat, and which had been lame and unable to work from laminitis for nine months. Blistering, turning out, and other modes of treatment had been adopted without any success, and he was so lame it was difficult to get him to move. I gave an opinion, unhesitatingly, that I could get him fit to work in a month, if sent to my establishment at Bath. Hilperton is situated one mile from the Trowbridge railway station. I ordered the groom and an assistant to start with the cob very early in the morning, before the usual hours of business, as, from his being so excessively lame, it would appear cruel to be driving such an animal. It took one hour and three quarters to walk that short distance, which will give an idea of the state the animal was in. At that time my friend Lawrence, veterinary surgeon of Romford, was staying with me, and had an opportunity of seeing the case. The first thing I did was to have the horse shod with very stout, wide, webbed, and thin-heeled bar shoes. I then gave a dose of physic, and after this had him exercised in the yard, which could not be done without a person walking behind him with a whip for the first few days. Soon he began to move better. I increased his exercise daily, and repeated the physic every three or four days. In the course of a fortnight he was fit for work, but I did not allow him to return until the expiration of a month. From that day up to last Thursday (when the poor animal died from inflammation of the bowels) he had done his ordinary work as well as before the disease occurred.

OBSERVATIONS BY MR. T. GREAVES.

Mr. President and Gentlemen,—The pleasure I have experienced in crossing England, in order to be present at your meeting to-day, has been, I assure you, no ordinary pleasure. The inducement to do so has been two-fold: in the first place I am prompted by a strong desire to do what I can to encourage these Provincial Veterinary Medical Associations; and in this I believe I am only actuated by the same aspirations which impel all right-thinking veterinary surgeons; and, in the second place, to repay a debt of courtesy incurred eighteen months ago by the author of the "Essay" who kindly paid us a visit to the Lancashire Veterinary Medical Association. He came on my invitation, and freely gave to us the benefit of his experience on that dreadful malady, Tetanus. It did me good to see that there are amongst us some who feel such an ardent attachment to their profession as not to hesitate to leave their practice and travel 200 miles and back, if only by so doing they can in some humble degree serve the cause and advance the

interests of our noble profession. All honour be to such men, and I would that like philanthropic sentiments could to some extent be diffused into every member of our profession.

In reference to the subject before us, viz., "seedy toe," the young and inexperienced practitioner may possibly be ready to remark to himself, "Whatever can Mr. Broad find to say about seedy toe? Surely it is a very circumscribed and unimportant subject, and no discussion can take place upon so trivial a question." But it is not so with the man of experience. Seedy toe has frequently come before him, and it has assumed troublesome and tedious forms; and he has felt that the question is one that is most interesting, and also one that demands our most serious attention. Only the other day one of the most eminent and experienced practitioners in England said to me, "I should very much like to go with you and hear Mr. Broad's paper on seedy toe, and the discussion which will follow. There is very much we have yet to learn upon that question. I should like to know much more about its cause, its nature, and the best treatment for it." Well, gentlemen, when a man of his standing in the profession spontaneously advances such an opinion as this, it may be esteemed a subject well worthy the consideration of this association. Mr. Broad has said everything that can be said about it, and said it well, leaving little to be discussed. *As to the question of cause*, whether it is generally caused by a weak, defective growth of horn, and dependent upon hereditary predisposition, or is referable to some violence done to the wall of the foot and coronary substance, at the outset, I am not able to decide. *As to its nature*, I contend it is a defective state in the interior of the body of the hoof. The seat of seedy toe is not between the horny and sensitive laminæ, but outside the horny laminæ, and in the substance of the horny wall. The fibrous horn seems to split and diverge at a given point, about half way up the hoof; and between these diverging surfaces a defective horny material collects. In this material there is an entire absence of horny fibrous structure, and this may be one, two, or three inches in breadth at the toe of the foot, and extends half way to the coronary substance from below; it may also exist for months, and even years, causing a weak foot, and giving rise to frequent lameness, from any and every trivial cause, so that they are sometimes very troublesome and very protracted cases. *As to the treatment*, great attention is always necessary in shoeing feet thus predisposed. I always rasp the hoof well away under the seedy toe, in order that the wall of the foot at that part shall have no bearing whatever upon the shoe, clean the crevice well out with a small searcher, and run into the cavity, once or twice a week, some warm tar mixed with palm oil, beeswax, &c. I always shoe with leather soles, or, if much tenderness be present, with round bar shoes, fitted well back, or with rocker shoes, being careful not to hammer the toe clip to. But all this will only give a sort of temporary relief; it will not radically cure it. To attempt a radical cure I would rasp every particle of hoof away that assumed the character of shell, remove every vestige of defective horn, and apply the above oint-

ment, or a liniment of linseed oil and lime water, equal parts, well incorporated; dress twice a week, to feed the horn and contribute to the growth of a sound hoof; also blister the coronet repeatedly. This rasping and paring will very likely have to be done repeatedly; and when you are quite satisfied you have a sound, substantial hoof growing down, your patient may be turned out to grass; but continue to dress occasionally.

There is another question which is closely connected with this subject, and which I ask permission to make a few observations upon; it is this—how much of the work may be considered as properly belonging to the duties or in the province of the veterinary surgeon? In some cavalry regiments this duty is occasionally assigned to the farrier of the regiment; but, gentlemen, the veterinary surgeon in general practice is very differently situated; he is expected, in fact he is obliged occasionally to take off a shoe himself, *and always to examine the foot;* and the man who is a practical workman at the foot, who is familiar with every form of disease in that organ, who can examine the foot correctly, and use his searcher dexterously, such a man has an enormous advantage over his fellow veterinary surgeon who is deficient in this point of practical knowledge. Of those men who have succeeded most in practice you will find, in nine cases out of every ten, that they attribute their success to their expertness in handling the foot, and having been able to use their searcher dexterously. In my intercourse with my professional brethren, during these last thirty years, I have had scores of consultations on cases of lameness in the foot; and I say it here, not in any improper spirit, but in a spirit of sorrow and pity, I have met with great numbers of veterinary surgeons whose glaring inaptitude in the examination of the foot, and in their knowledge of the diseases and treatment of the foot, is lamentably and wofully apparent. These men throughout life are constantly contending with an immense drawback to their success. They have very probably gone direct from the druggist's counter or the boarding school to college, and never had an opportunity of gaining a practical knowledge of this department. Now, sir, I for one protest against thus placing any man in such a false position. It is unfeeling and cruel in us to permit it. I most gladly bear my testimony to every word upon this subject in the inaugural address of the President of the Lancashire Veterinary Medical Association by Mr. Haycock, recorded in the April number of the *Veterinarian*, p. 318. I have had four forges a great part of my life, and am fully aware of the great importance of a thorough knowledge of this subject. I have had the great honour to attend meetings of the north of England, the Yorkshire, the Liverpool, the Lancashire, and now the additional pleasure of attending the West of England Veterinary Medical Association. I perceive one special sentiment pervading the character of each and all of them, viz., the true PRACTICAL ELEMENT; and it is in these associations that we must denounce this state of things. We must not be too mealy-mouthed about it. The present season is very opportune. There is no possible way of

overcoming this great evil only by making every aspirant to our profession *serve a regular apprenticeship.* He should begin at the beginning. Let him become as familiar with and as handy in his work as the cricketer is with his bat and ball, or the trained soldier is with his musket; it should grow with his growth in his youth; he should be perfectly familiarised in handling the horse, especially his feet; in going about him in a free and easy, systematic, and natural manner; but, above all, he should be obliged to take off shoes and pare out feet occasionally; let him handle the knife daily. *This is the only way he can become proficient in the treatment of the foot;* then, when this duty is effectually performed, you may depend upon it we shall have a more efficient and useful body of men in the profession than we have now. It is only in after-life that the practitioner finds out the importance, the usefulness, and the value of this knowledge of which I speak. It is patent to all men that he is the most useful member of society who serves society best.

In the town in which I live (Manchester) five sixths of the cases that come under notice are cases of lameness, and nine tenths of them are lame in the foot from accidents, sandcracks, corns, treads, crushed soles, contusions, quittors, canker, seedy-toe, pricks, &c. &c. Any man who does not possess a thorough knowledge of the foot and its diseases, and is not an expert in the use of his searcher and in adapting his remedies, is of no use whatever, comparatively speaking, in our town, however highly educated he may be, or however eminent as a theorist he is. I presume the same requisition will appertain more or less to all large towns. I allude to these things, gentlemen, because my working practical experience forces it daily upon my notice. The feet of horses in Manchester sustain perhaps a greater degree of wear and tear than the same number of horses in any other town in the kingdom, in consequence of all our streets being paved with the blue Welch sets, which have so notoriously a hard and slippery surface. But besides this, we have to contend with another, a somewhat new source of lameness, viz., the work called shunting. This has sprung up during the last twenty years in the railway yards. I have over 112 of these shunt horses to attend to in Manchester; and in Liverpool there are over 162 of these horses. The lameness in these horses arises chiefly from accidents of a most desperate character. It is almost of daily occurrence for one or more of these horses to get their feet run upon or run over by the wheel of one of the waggons, and have a portion of the hoof crushed off from above downwards; also bursting of the hoof, violent contusions of the coronet, tearing the shoe off and treading upon the nails, &c.; occasioning all kinds of consequences, such as inflammation, suppuration, extensive sloughing, obstinate sprouting, open joints, exfoliation, quittor, seedy-toe, false quarter, &c.

In this kind of a practice, where you have almost constantly on hand eighteen or twenty desperate foot cases, it very frequently happens that a horse is found to be suffering very great pain, but the

precise seat of it is shrouded in obscurity, and is very difficult to find out and relieve; it may be a hidden stump, high up in the foot, pressing upon the laminæ, or a small portion of matter pent up and concealed halfway to the coronet; or it may not be dependent upon any foreign body at all, but is dependent upon severe inflammation, produced by an injury done to some of the delicate tissues in that complex organ. Now, it is in such cases as these, where sympathetic fever is running high, that the practitioner's greatest amount of ability, acuteness, and dexterity are demanded to determine correctly in the first place the nature and the exact seat of the pain; and in the second place, with practical aptitude and expertness, to explore the foot and remove the cause of pain. I have called your attention to this in corroboration of what I have advanced, namely, the importance of the practical knowledge of the foot, so that the youth of our profession may be taught to take the foot up between his own knees and to handle the searcher expertly; to keep his searcher always in good order—to have it always by him; also the foot-picker and fleams; and in the gig the bright pincers, hammer, and buffer, rasp, leather apron and twitch, sponge, bandages, &c. &c. Unless the veterinary student of our time be more efficiently taught in these particulars, his degree of usefulness in his calling will be only half developed. Would it not be a measure of immense practical importance if each of the colleges would institute a distinct course of instruction in the forge, with special reference to the foot? Each student should be obliged to put on a clean leather apron, to take the fore foot between his knees and the hind foot upon his thigh daily or weekly, to handle his tools and go through certain forms, and pare out dead feet, like unto the artillery now being drilled and trained to work their guns in time of peace. This is done to keep their hands in, and to enable them to be expert when in action. When I was at college I remember students who were never known to have their gloves off once within the precincts of the college; and when they got their diplomas it was said of them—and if I recollect right they said it of themselves—"I will now go and buy a pair of fleams and a searcher, and learn how to use them for the first time." Now, sir, I ask you—I ask any man who knows what practice is—whether such a man was fit to go into practice? nay, is it not very likely he will often do much more harm than good? Is it not perpetrating a great wrong to him and to society to entrust the life or the foot of a valuable horse at once to his treatment? In conclusion, I beg leave to throw out a suggestion—and I do this in all earnestness—that, as soon as we have got our medical Bill passed, a memorial shall be sent to the Council from each of the six or seven Provincial Veterinary Medical Associations, signed by the president of each on behalf of the Association; it would be better still if signed by the President and every member individually. Or, perhaps, one collective memorial, signed by the President and every member of each Association, praying the Council and the Colleges individually to

adopt—1st, *initiatory examination;* 2nd, *to rigidly enforce the apprenticeship clause at each of the Colleges;* and 3rd, *to cause a more practical course of instruction whilst at College in reference to the foot of the horse.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

The usual Quarterly Meeting of the above Association was held in the Medical Institution on the evening of Friday, 10th August.

In addition to the local members present, there were—Mr. Cartwright, Whitchurch; Mr. Greaves, Manchester; Mr. Storrar, Chester; and Mr. Walley, West Derby.

Mr. Heyes, Vice-President, in the chair.

The minutes of the former meeting having been read and confirmed, the chairman, in introducing the essayist, expressed his regret at the small attendance of local members, more especially when such an interesting subject as Venesection was brought before the meeting. Some gentlemen, he remarked, could travel scores of miles, at a great sacrifice of time and money, to attend these meetings, while others were so very indifferent about everything concerning the profession, except the £ *s. d.*, that they would scarcely trouble themselves to walk across the street.

Mr. Wilson then read the following essay

ON VENESECTION; ITS USE AND ABUSE.

It is, I believe, agreed upon by all practitioners, that of medicine, whether pertaining to the human or the veterinary art, as of all the natural sciences, *facts* are the foundation.

The statement may, perhaps, be said to be imposing, and is apt to gain for whatever is so denominated an unreflecting belief. It seems as it were to imply something obvious, something tangible, which cannot mislead; and opposed to which all reasoning is fruitless; a persuasion, in short, which is embodied in the popular expression conveyed in the adage of "facts being stubborn things." If facts, then, be admitted to be the foundation of all medical science, surely the first requisite in all attempts to improve it is to ensure all alleged facts to be real truths. Yet it is well known to all of us that medical facts are derived from the observations of phenomena during life and the examination of structure after death; whilst in both it will be conceded that many sources of fallacy exist.

In the different modes of investigating disease as ordinarily followed, it cannot be but that we are liable to labour under many

radical errors or defects; else the researches of ages, pursued as they have been with exemplary diligence, and in many instances by minds of the first order in our profession, must, ere this, have rendered our knowledge and treatment of disease more certain and complete. It is clear that if in the operation of remedies which, through our comparative ignorance, we are compelled to adopt, we could discover the series of physiological changes through which the curative effect is produced, our knowledge would be most valuably extended, and our capability of employing such remedies with precision and certainty greatly increased.

To say merely that a remedy cures a disease, and to be content with this knowledge, would betray a lamentable misconception of what medical science requires. A higher knowledge than this is to be sought for, and can only be obtained through a closer investigation of the vital processes by which Nature, *when duly assisted*, can accomplish so much in rectifying the disturbances of the animal frame.

In my present paper I make no presumptuous pretension to supply this want, my object being rather to direct your attention to a portion of our remedial practice which latterly seems to have fallen almost into disuse; and to endeavour to show, through the results of my own professional experience, the importance of its being once more revived and persevered in. I need hardly say that I refer to what the title of my essay assumes to treat of, namely, VENESECTION; ITS USE AND ABUSE.

I am aware that in seeking to uphold the practice of bleeding, I shall have to encounter much opposition from many of my professional brethren; but notwithstanding this, and with all due deference to their respective opinions, I shall endeavour to show, not alone from my own personal experience, its importance and utility, but that I am fortified in my observations by those of others whose more enlarged experience on this question entitles them to respect and consideration.

Youatt, whose name is familiar to all of us as an authority of no mean pretensions, thus observes in his 'Treatise on the Horse,' on the subject of inflammation:—"If inflammation consists of an increased flow of blood to and through the part, the ready way to abate it is to lessen the quantity of blood."

Further on he proceeds to say—"Many horses are lost for want or insufficiency of bleeding; but very rarely is one materially injured by the extraction of blood in the early stage of inflammation."

Percivall, again, thus boldly expresses himself in reference to the disease of staggers:—"I will venture to say, there are few veterinarians who carry out phlebotomy to the extent they ought."

Spooner, in his edition of 'White's Farriery,' is also emphatic in the same views.

Directed by these practical authorities, I purposely devoted a considerable portion of my attention to this important question, and although I must confess that I was somewhat sceptical at the outset, as to its value as a reliable remedial agent, I was gradually led to

come to the conclusion that its practice is one of the principal strongholds upon which we can depend in the veterinary art. Let it not be imagined, however, that in thus expressing myself so strongly in favour of bleeding, I mean that course of practice which was followed in earlier times, and is even still pursued by some practitioners at the present day. This, indeed, was and is its *abuse;* for when I now recall to memory, in the commencement of my professional career, the large abstraction of blood which I have witnessed taken from the horse in ordinary cases, and the debilitating effects which resulted therefrom, it can scarcely be wondered at that in my more matured experience I should have entertained doubts as to its expediency.

However, as I have already remarked, my views of its utility have since become confirmed by practical observation and experience. Perhaps I cannot do better than illustrate its practical evidence to myself, by making an allusion to the following cases which came under my own immediate care and treatment. I am, however, sorry to inform you that, unfortunately, I did not take notes of them, consequently am obliged to quote from memory only.

It will be remembered that in the winter of 1864 and 1865 the epidemical disease, by some authorities called "Influenza," and by others, again, classified under the nosological term of "Typhoid Fever," prevailed to a large extent over the Continent of Europe, and also in this country, and more especially exhibited its attacks upon the horse. It is somewhat of a coincidence to know that a similar disease, analogous indeed and bearing the same name, showed itself in the human subject.

The symptoms of this disease you are all of you of course familiar with, so that it does not require me now to enter into any minute description of them. Suffice it to say that during the time which I have named I treated for this special complaint upwards of twenty horses belonging to one firm, and they were nearly all of them heavy draught-horses. I pursued the treatment so popularly advocated by the profession, and which I had previously found to act very successfully in my own practice, viz., the administering of stimulants and tonics. The results, however, in respect of eight patients which I thus treated were neither satisfactory nor encouraging, for I lost them all. This was naturally disheartening, the more especially as the disease was showing itself so fatal in its character all over the country. I therefore determined to try the effects of bleeding as a remedy, in place of the other treatment, which had so signally failed.

The horses, as I have already said, being draught-horses, there was little or no perceptible difference in their physical condition, whilst their ages would average about eight or nine years.

My diagnosis arrived at was the same with respect to each; the symptoms, in fact, showing themselves alike, and modifying themselves only in regard to their separate diatheses. As each of the remaining horses referred to were submitted to my care, I abstracted blood from each, and had the gratification to find that all of them

recovered, and were able to resume work in the space of from one month to six weeks afterwards.

It is necessary now to state the quantity of blood I took away. I never, on any occasion, drew more than from three to four, and sometimes only two quarts, according as the symptoms and the condition of the patient directed my judgment.

It will thus be seen that in the foregoing cases there resulted a decided superiority in the treatment by venesection over that I had previously followed; and I may further remark, that in subsequent cases which have come under my care, not alone suffering from influenza, but in such cases as pneumonia and enteritis, I have pursued the same practice, and with equally marked success.

It must not be imagined, however, that I attribute my success to mere bleeding alone, without taking into consideration the accessory aids which have contributed towards it in the way of internal remedies. Much, indeed, do we owe to these, when judiciously administered, and perhaps not a little, likewise, to the dietary of the animal, as it is now better regulated and understood; together with the improved sanitary arrangements which have been introduced, contributing towards the comfort, and consequently the general health and usefulness of that noble animal the horse.

I will now draw this paper to a close by again quoting from Youatt. In looking over his work, I find that he recommends bleeding in the following diseases, viz., megrims, apoplexy, phrenitis, tetanus, palsy, rheumatism, ophthalmia, gutta-serena, strangles, poll-evil, fever, inflammation, laryngitis, roaring, bronchitis, pneumonia, pleurisy, enteritis, jaundice, nephritis, diabetes, cystitis, and albuminous urine. He also recommends local bleeding in sprain of the shoulder, sprain of the tendons and ligaments, diseases of the hock, swelled legs, acute and chronic laminitis, contraction of the hoof, and navicular joint disease.

It will be seen that the diseases which I have enumerated comprise most of those which come under our notice, and I think you will agree with me that the work is a fair average one to quote from.

On the present occasion it has been my desire to be brief. The few observations which I have ventured to offer are, I trust, not unworthy of the attention of those to whom they are addressed; and it would be a gratification to me if further remarks were now to come from others.

The task which I assigned myself sprang from the sense which I entertain of the duty incumbent on every member of our Association to contribute, with his best powers, to the end designed; and if the opinions ventured on by me in my present paper should be deemed not wholly unimportant, the subject cannot fail to interest others, so as to ensure its being more worthily and more ably treated.

Mr. Cartwright said that when he commenced practice bleeding was all the rage; since then it had no doubt fallen into disuse, and he had even heard of some practitioners who would not bleed under

any circumstances, but he for one did not know what they could do without bloodletting in such cases as pleuro-pneumonia, enteritis, and ophthalmia. In all these cases bleeding must be had recourse to. He then related several interesting cases illustrative of the good effects of phlebotomy when resorted to judiciously. As an instrument for performing the operation, he gave a decided preference to the fleam over the lancet.

Mr. Brydon objected, as a rule, to bleeding, although he believed there were some cases in which it might be found necessary to perform that operation, such as cases of "weed;" but he could not agree with the essayist in bleeding for influenza.

Mr. Greaves remarked, that the subject was a most important one, and one on which a great variety of opinions existed; it was also one on which men's opinions often changed. Some twenty-five years ago he wrote an essay on this subject, and at that time he bled in all diseases; now, his views had changed and with it his practice had changed; he was not sure whether or not the nature of diseases changed, but certainly the human practice had changed as well. The veterinarians at that time bled for scarlatina, smallpox, and influenza,—now they never dream of it. He, for one, would not bleed in influenza in the horse. During the prevalence of the epidemic referred to by the essayist, he had several cases die, but they were all old, debilitated horses, and his firm belief was that bleeding would only have killed them a little sooner. In laminitis, he thought those cases he had bled the most had done the worst. In congestion of the lungs, he saw no necessity for bleeding; he would, instead, trust to stimulants and fresh air. No bloodletting can beat this. In "weed" he always bled from the toe, although he was not satisfied that it does any good; still it is the custom, and in some instances one is obliged to conform to custom.

Mr. Walley observed, that in his practice he often found that the moderate abstraction of blood produced a kind of tonic effect on some of his patients, and he related a case in which the state of the blood had helped him to a proper diagnosis of the disease.

Mr. Storrar said, his opinion was that no rule could be laid down as to what cases should be bled and what should not. There was, no doubt, a great change of opinion as to its curative effects, both in human practice and in ours. In his experience as a county practitioner, he often found that his patient had been bled before he was called in, and he had met with a great many cases in which he had no doubt it had done a great deal of harm. He related several very interesting cases in cattle in which, after the jugulars had been opened on both sides, the blood would not flow, in consequence of an excessive amount of lymph.

After some remarks by other gentlemen present, Mr. Heyes, the chairman, said that he had listened with very great satisfaction both to the reading of the paper by his friend Wilson, as well as to the interesting discussion that had followed. He did not, however, agree with the essayist in bleeding for influenza, but in such cases as laminitis, ophthalmia, enteritis, and congestion of the lungs, he

considered the free use of the lancet as our great sheet anchor. In his practice there was not a week passed over but he resorted to bleeding, more or less, as a remedial agent, and that with the very best results.

After the usual votes of thanks to the chairman and essayist, the meeting broke up.

GEORGE MORGAN,
Hon. Sec.

Veterinary Jurisprudence.

YORKSHIRE ASSIZES.

WEST RIDING DIVISION.

NISI PRIUS COURT, LEEDS.

LORD GLASGOW *v.* THE RAWCLIFFE JOINT-STOCK STUD FARM.

(*Special Jury.*)

THIS was an action to recover damages for alleged negligence towards a thorough-bred horse. Mr. Serjeant Hayes and Mr. Kemplay were for the plaintiff; and Mr. Overend, Q.C., and Mr. Battye were for the defendants.

Serjeant Hayes said that the Rawcliffe Joint-stock Stud Farm was a very large establishment used for the purposes of a stud farm, the object of the gentlemen or society to which it belonged being to improve and carry on the breed of race-horses of a first-class character. His lordship owned a horse called "Brother to Bird-on-the-Wing," the animal being an entire horse between twelve and thirteen years old. His sire was "Birdcatcher," out of "Touchstone." In 1864 Lord Glasgow sent this horse to Rawcliffe stables, being then in as sound a condition as possible. He remained there until July, 1865, when he was removed by his lordship's grooms to York, until arrangements were made to take him to Doncaster, and there it was discovered by the stud groom that the animal was stone blind of the near eye. The allegation on the part of the plaintiff was, that the horse had been treated negligently and carelessly by the defendants.

William Cunningham, Doncaster, stud groom to Lord Glasgow, deposed as to the state of the animal when he received him back from Rawcliffe, declaring that he was then blind. There was a film over the eye, and it was now attempted to be set up by Mr. Martin, the manager of the farm, "that the horse had hurt his eye during the night, but that he never would allow his head to be touched, or anything to be done to it."

This was characterised by Serjeant Hayes as being absurd. The horse was worth nearly £1000, and £100 would be a small damage for the injury he had received.

Mr. Field, veterinary surgeon, London, who examined the horse in July, believed the eye to have been affected by some external injury.

Mr. E. C. Dray, veterinary surgeon, Leeds, followed on the same side.

Mr. Overend, for the defendants, said the horse was serving mares at Rawcliffe until the end of the season. In the month of March, 1865, "The Brother" was left in a large roomy loose box—the arrangements being very nicely carried out at this stud farm. One Thursday night in March, a man residing opposite the stable heard a noise in it. Swift, the groom who was that night on duty, proceeded to the spot, but could not for the moment succeed in opening the door. On looking through the window he saw "The Brother" lying against the door. It was probable the horse had been rolling during the night, and had got fast near the door. It was afterwards found that he had received a blow on the head, having slightly hurt his eyelid, but he would not for the time allow anybody to approach him. Mr. Day, the veterinary surgeon who attends the farm, ought to have been there on the next day (Friday), but he was unfortunately engaged in the neighbourhood and did not see the animal until Saturday. Mr. Day did attend him on that day, and applied the usual system of treatment, and that which had been suggested by Mr. Field and Mr. Dray.

Mr. Day's opinion was, that the horse might either have become blind from concussion or from cataract; and

Mr. Martin declared that he thought the animal was quite well when Lord Glasgow's people took him away. He had not the slightest idea that he had lost his sight.

His Lordship briefly summed up the case to the jury, and the latter found a verdict for the plaintiff, with one farthing damages.

[The horse's pedigree is—Irish Birdcatcher, dam by Touchstone, grand dam by Reveller. A three-year-old colt by him won a £1200 stake at Goodwood last week; and Ambition, another of his stock, won several races last year.]

ARMY APPOINTMENT.

War Office, Pall Mall; *Aug. 3rd.*

7th Hussars.—Veterinary Surgeon Francis Walker, from the Royal Artillery, to be Veterinary Surgeon, *vice* John Burr.

MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS WHO HAVE BEEN APPOINTED INSPECTORS FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton
Jones, A. A., Biggleswade
New, A., Ampthill
Rogerson, T. W., Bedford

Berkshire.

Allnutt, Henry, Windsor
Bailey, Robert, Lambourn
Bland, W. C., Newbury
Buckridge, W., Hungerford
Drewe, G. A., Abingdon
Field, W. A., Newbury
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Waterman, C., Reading
Wheatley, W. A., Reading

Buckinghamshire.

Beeson, S., Chalfont
Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
East, William, Princes Risborough
Lepper, Henry, Aylesbury
Lepper, George Andrew, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Rayment, S. J., Ashendon
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Barrow, Richard, Newmarket
Barrow, W., ditto
Barrow, Charles, ditto
Holl, Lewis, Outwell, Wisbeach
Knowles, Robert, Wisbeach
Scruby, Thomas, Royston
Sparrow, S., Cambridge
Wallis, Page, Cambridge
Webb, G. B., Balsham, Linton

Cheshire.

Barker, George, Brereton, near Congleton
Barker, Richard, Middlewich
Darling, James, Duddon, Tarvin
Darwell, George Henry, Knutsford
Dunn, William, Tarporley
Greaves, John, Altrincham
Maxfield, Robert, Congleton
Taylor, John Boardman, Hyde
Willett, W. G., Northwich
Wyche, T., Wilmslow

Cornwall.

Arnall, George, Bodmin
Hire, Edward, Penzance
Lamb, G. W., Liskeard
Page, George, Truro
Tucker, E. S., St. Germans
Raddall, Warne, South Petherwin

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Fisher, John, Whitehaven
Little, Joseph, Alston
Thompson, Henry, Aspatria
Howe, Jacob, Sebergham

Derbyshire.

Flower, Henry, Derby
Hudson, T. T., Bolsover
Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, James, Exeter
Austin, Thomas D., Honiton
Bickford, Alfred, Totnes
Bickford, W. J., Kingsbridge
Brewer, William, Barnstaple
Collings, John J., Plymouth

DEVONSHIRE (*continued*).

Dyer, Richard H., Torquay
Ferris, William, Dartmouth
Gregory, T. D., Bideford
Heath, James P., Exeter
Hewish, John, Barnstaple
Leach, Edward, North-Tawton
Ward, William, Crediton
Watson, Alfred, Tiverton

DORSETSHIRE.

Redwood, Joseph, Dorchester

DURHAM.

Adamson, Thomas, Barnard Castle
Allison, William, Thornley
Dudgeon, David, Sunderland
Foreman, Thomas, Leadgate
Hall, Robert, Stockton-on-Tees
Hedley, Matthew, Darlington
Hunting, Charles, South Hetton
Loades, A. M., Bishop Auckland
Mann, Andrew, Chester-le-Street
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Peele, J. E., Durham
Plews, Thomas, Stockton
Thompson, Thomas, Sunderland

ESSEX.

Arthy, H. B., Stanway
Brook, T., Chipping Ongar
Easton, W. G., Woodford
Helmore, William, Stratford
Hutton, Robert R., Toppesfield
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Taylor, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, Sampford

GLOUCESTERSHIRE.

Morgan, C., Stroud
Thomas, Richard W., Tewkesbury

HAMPSHIRE.

Barford, John Davis, Southampton
Cartwright, Charles, Bishop's Waltham
Clarke, W. M., Christchurch
Colebrook, Charles, Basingstoke
Gates, Robert, Andover
Gould, George James, Southampton
Gregory, J. B., Portsmouth
Redford, Thomas, Winchester
Verney, R. G., Stow-on-the-Wold

HEREFORDSHIRE.

Barling, F. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Hirst, Charles, Barnet
Proctor, Harrison, Hertford
Rogerson, Ed., St. Albans
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Hockerell
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.

Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, W., Margate.
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Cooper, John, Ashe-next-Sandwich
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst, W. Henry, ditto
Fordham, George, Willesborough
Gregory, T., Tunbridge
Hogben, Henry, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington
Noakes, Henry, Brenchly
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Anderton, J. W., Burnley
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, J. W., Worsley
Cunliffe, Thos., Church
Ellis, John, Liverpool
Ellis, Peter, ditto
Gibson, A. L., Manchester
Haslam, J., Manchester
Heaps, William, Preston
Heyes, Gilbert, Liverpool
Kirkman, James, Blackburn
Lawson, Alexander, Bolton

LANCASHIRE (*continued*).

Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Nuttall, Ed., Rawtenstall
Polding, J. P., Bury
Richmond, Henry, Chorley
Rothwell, J. P., Rochdale
Smith, Benjamin, Ulverston
Smith, John, Ormskirk
Taylor, W., Manchester
Taylor, James, Oldham
Twist, Charles, Woolton
Welsby, Joseph, Prescot
Worthington, Wm., Wrightington
Yates, John, St. Helens

LEICESTERSHIRE.

Bailey, E., sen., Leicester
Bailey, Edward, jun., ditto
Blunt, H., Lutterworth
Brown, S., Melton
Goodall, H. J., Waltham
Gray, Charles, Kibworth
Wiggins, John, Market Harborough

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston
Chapman, John, Gainsborough
Clarke, Thomas Allan, Horncastle
Clayworth, Joseph, Spilsby
Cutting, Henry, Market-Rasen
Darby, Thomas, Louth
Dickinson, J. G., Boston
Dobson, John, Wragby
Dobson, R. W., Holbeach
Gresswell, Daniel, Louth
Hall, William, Northkillingholme
Hardy, R. T., Sleaford
Hardy, Robert, Grantham
Howse, Henry, Lincoln
Hutson, Curtis, Market Rasen
McHugh, John T., Brigg
Metherell, Richard, Spalding
Roberts, John Thomas, Long Sutton
Santy, Arthur H., Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle
Wattam, John, Stamford
Wentworth, George, Laceby
Wilson, Robert, Caistor
Wyer, Daniel, Folkingham
Wyer, Goforth, Donington

MIDDLESEX.

Boughton, Thomas Peter, Hounslow

MIDDLESEX (*continued*).

Broad, James C., Market Street, Paddington
Dale, William, Stanmore
Dexter, Thomas, 8, Motcombe Street, Chelsea
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Leggatt, J., Hanwell
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shaw, H. R., Sydenham
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Stanley, Thomas, Edmonton
Tegg, George, Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth
Wiltshire, Thomas D., Rhymney, near Tredegar
Wilkes, Thomas, Newport

NORFOLK.

Baldwin, George Thomas, Fakenham
Barcham, Robert, Paston
Beart, Walter James, Lynn
Bower, W. J. T., East Rudham
Buckingham, John, Barnham Broom
Buckingham, H., Harleston
Carter, Charles N., Swaffham
Carter, James, Litcham
Carter, Richard, East Dereham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Aylsham
Ellis, William, Hempnall
Emms, Henry G., Foulsham
Hammond, John, jun., Bale, Thetford
Heffer, Robert, Downham Market
King, Edward James, Diss
Mays, Thomas, Wymondham
Overed, John Davey, Blofield
Plumbley, George H., Skeyton
Rattee, Daniel H., Hapton
Riches, John Worship, Acle
Sharpen, Robert, Gresham
Shipley, William, North Walsham
Shipley, William, Great Yarmouth

NORFOLK (*continued*).

Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Aris, Benjamin B., Wellingborough
Branford, Wm. Catton, Oundle
Dawson, Jacob, Kettering
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Richardson, W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long-benton
Cope, W., Newark
Boag, William, Morpeth
Fairbairn, John, Alnwick
Hubbick, Joseph, ditto
Hunter, H., Newcastle-upon-Tyne
M'Gregor, Daniel, Seaton Delaval
Stephenson, C., Newcastle-on-Tyne
Wilkinson, Henry Etridge, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Barlow, Robert, Cotgrave
Cave, Thomas, Nottingham
Cope, W., Newark
Hudson, Richard, Moorgate, Retford
Hutchinson, Henry, East Retford
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Talbot, Francis, Whatton
Wilson, Stretton R., Ollerton
Young, Wm., Southwell

OXFORDSHIRE.

Bull, Alban, Hooknorton
Jennings, William, Bicester
Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury
Wadlow, C. H., Oxford

RUTLAND.

Parnell, Charles, Oakham

SHROPSHIRE.

Atcherley, James, Bridgenorth
Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Dorrington
Jenks, John, Ellesmere
Jones, James B., Ludlow
Litt, William, Shrewsbury

SHROPSHIRE (*continued*).

Roberts, Thomas, Oswestry

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Coles, William, Kilmersdon
Dring, C. J., Bath
Emms, William, Ilminster
Hutchings, William, Kimpton
James, Sidney, Frome
Symes, Charles, Wincanton
Symes, Thomas, Yeovil
Whitmore, George, Landport
Whitmore, Absalom, Shepton Mallet

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Cartwright, H. J., Wolverhampton
Checketts, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Richard, ditto
Pritchard, Harry D., Wolverhampton
Robinson, William, Tamworth
Walters, Robert George, Newport

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes, W., John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lowe, C., Dockhead, Bermondsey
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham

SURREY (*continued*).

Moon, James, Kingston-on-Thames
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.

Burt, Walter, Brighton
Burt, William, jun., ditto
Callow, John, Horsham
Crofts, Henry, Arundel
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Elkington, R., Coventry
Hunt, R. L., Edgbaston
Ison, William Charles, Atherstone
Mather, Frederick, Warwick
Parker, J. M., Birmingham
Proctor, Alfred B., Meriden
Rose, James, Warwick
Stanley, Edward, Birmingham
Stanley, Wm. Thomas, Leamington
Walker, Alfred, Rugby
Watson, Walker, ditto

WESTMORELAND.

Eastcott, W., Kendal
Herd, John, Appleby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Coleman, John, Salisbury
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Barker, E. T., Pershore
Blakeway, Francis, Stourbridge
Boulton, R., Bromsgrove
Butler, T. W., Evesham
Harber, W. Alex., Kidderminster
Huntress, J. R., Dudley
Perrins, Henry Rose, Worcester

YORKSHIRE.

Anderton, J. W., Skipton-in-Craven
Barker, Charles, New Malton
Barker, William, Middlesborough

YORKSHIRE (*continued*).

Bourdass, George, Bridlington
Bowman, J., Elvington
Bowman, Thomas, Croome
Boyce, J. H., Goole
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, Bradford
Cooper, J., Market Weighton
Cortis, Richard, Shipton
Cuthbert, John, Leeds
Danby, F., Driffield
Day, Frederick, York
Dearlove, William, Harrogate
Douthwait, William, Beverley
Dray, Edward C., Leeds
Edmundson, W., Hornby
Elam, William, Huddersfield
Emmot, D. C., Keighley
Fallding, S. F., Wakefield
Freeman, Joseph, Hull
Fryer, J., Kirby
Hain, George, Thirsk
Harrison, T. M., Thirsk
Hedley, F., Richmond
Hedley, J. W., ditto
Holt, H. L., Northallerton
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Lockwood, N. J., Kingston-upon-Hull
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Naylor, E. M., Wakefield
Nicholson, Robert, Womersley
Patterson, Charles, Dewsbury
Pemberton, G. H., Knaresborough
Pennock, James, York
Ringrose, J., Weaverthorpe
Robinson, A. E. G., Snaith
Scriven, William, Aberford
Secker, Charles, Knaresborough
Secker, Thomas, Ripon
Stevenson, John, Whitby
Stoddard, John, Richmond
Stone, Matthew, Doncaster
Taylor, W. Baxter, South Anston
Thornton, James, Easingwold

WALES.

Brecknockshire.

Ferris, John, Brecon
Llewellyn, H., Brynmawr, Brecon
Stokoe, Thomas, Hay

Cardiganshire.

Bodington, George, Canton, Cardiff

Carnarvonshire.

Williams, Rumsey James, Rhyddallt

Denbighshire.

Edwards, John, Abergele
Kennedy, Thomas, Wrexham
Rowlands, David, Llanrhaiadr-yn-Mochnant, Oswestry

Pembrokeshire.

James, D. E., Old Bridge, Haverford West

SCOTLAND.

Aberdeenshire.

Snowball, Matthew C., Huntley
Thompson, James, School Hill, Aberdeen

Ayrshire.

Aitken, William, Kilmarnock
Irvine, William, Pirleyhill, Girvan
Tennant, C., Tunnock, Maybole

Berwickshire.

Baillie, James, Lauder
Hogarth, George, Berwick
Lothian, William, Dunse
Watson, Robert, Coldstream

Clackmannanshire.

Knight, Robert, Alloa

Dumbartonshire.

Gardner, James, Alexandria
M'Dougall, James, Old Kilpatrick
Sproull, James, Milngavie

Dumfriesshire.

Paterson, Bell Robert, Dumfries

Edinburghshire.

Aitken, John, West Hart Street, Dalkeith
Currie, John, Caitha Stow
Grainger, James, Rosewell, Lasswade, Edinburgh
Worthington, William, Clyde Street, Edinburgh

Fifeshire.

Balfour, Andrew, Balwearie Mill, Kirkcaldy
Duncan, A., Colinsburgh
Morris, John, Torryburn, by Dunfermline

Forfarshire.

Keay, James, Forfar
Lyon, William, Forfar
Sandeman, James, Kerriemuir
Taylor, Alexander, Brechin

Haddingtonshire.

Muir, Alexander C., Dunbar
Storie, Francis, East Linton, Prestonkirk
Young, George, Haddington

Kincardineshire.

Low, John, Auchinzeoch, Fordoun
Robertson, Alexander, Stonehaven
Simpson, Andrew, Fettercairn

Kinross-shire.

Hepburn, John, Milnathort, Kinross

Kirkcudbrightshire.

Irving, John, Castle Douglas

Lanarkshire.

Cockburn, William, Glasgow
Finlater, Richard, Carstairs-by-Lanark
M'Call, James, Glasgow
Pettigrew, Robert, Strathaven
Robertson, Adam C., Airdrie
Steele, John, Biggar
Young, David, Hamilton

Linlithgowshire.

Borthwick, John, Kirkliston
Nimmo, Alexander, Linlithgow
Nimmo, Andrew, Linlithgow

Peeblesshire.

Ferguson, Patrick, Peebles
Young, William, Hallmyre Dean, Leadburn

PERTHSHIRE.

Connacher, Charles, Perth
Galloway, Peter, Loan of Errol.
Glennie, Mathew, Camp Muir, Coupar-Angus
M'Gregor, Andrew, Mouzievaird, Crieff
Panton, John, Blair Athole
Robertson, Donald, Kenmore, Dunkeld
Robertson, John, Madderty, Crieff
Smail, D. C., Blairgowrie

RENFREWSHIRE.

Donaldson, John, Paisley
Pottie, Alexander, Renfrew
Robinson, Alexander, Greenock

ROXBURGHSHIRE.

Bowie, Messrs. Andrew and James, Hawick
Robertson, William, Kelso
Smith, Alexander, Appletreehall, Hawick

STIRLINGSHIRE.

Waugh, William, Stirling

MISCELLANEA.

PRESENTATION OF A TESTIMONIAL TO MR. BODINGTON.

ON Wednesday, Aug. 8th, Mr. George Bodington, M.R.C.V.S., Cardiff, late cattle disease inspector for the district, had presented to him by some gentlemen interested in the cattle trade, a valuable Albert gold chain and key, the latter got up in the most chaste and artistic style. The presentation was made as a token of respect for the very courteous manner in which Mr. Bodington had discharged the onerous duties imposed on him by Act of Parliament, and, we need not add, was duly appreciated by the recipient.

ELIMINATION OF LIGHT.

BY the combustion of pure magnesium wire in the flame of a gas or spirit lamp, Professor Roscoe has demonstrated that a very powerful light may be obtained, possessing chemical properties similar to sunlight, and may therefore be resorted to for photographic purposes. As a proof of the intensity of this light, he says, "the burning of magnesium wire of the thickness of 0·297 millimetres evolves as much light as seventy-four stearine candles, of which five go to the pound. If the light lasted one minute, 0·987 metre of wire, weighing 0·1204 grms., would be burnt. In order to produce a light equal to seventy-four candles burning for ten hours, whereby 20 lbs. of stearine is consumed, 72·2 grms. of magnesium would be required."

THE

VETERINARIAN.

VOL. XXXIX. No. 466. OCTOBER, 1866. Fourth Series. No. 142.

Communications and Cases

REMARKS ON SOME OF THE DISEASES AFFECTING THE FACIAL REGION OF THE HORSE'S HEAD.

By Professor Varnell, Royal Veterinary College, London.

(*Continued from p.* 701.)

Ulceration of bone occasionally takes place as the result of the above lesions, the treatment of which I shall describe further on. I may at once state, however, that in the majority of cases of this kind, although the gums are often very much inflamed and tender, so as to interfere with the horse's feeding, yet such injuries, as a rule, simply require to be kept clean, so vigorous are the powers of reparation at this period of the horse's life. The act, however, which produced this mischief is none the less inexcusable.

Fracture of the Anterior Maxilla.

As I have before stated, either of the maxillary bones may be seriously injured, or even fractured, from the incisor teeth becoming wedged in between the iron bars which are sometimes used to partially divide stalls or boxes, or from being fixed upon some hook or similar projection in the wall or partition. The construction of stalls or boxes ought to be such that accidents of this kind cannot occur; but, as a

rule, builders do not think of these things, while the work is seldom superintended by those who are likely to suppose accidents ever could or would occur in such a way. I will illustrate a circumstance of this kind by briefly describing a case which not very long ago came under my notice.

The two upper and outer incisor teeth of the right anterior maxillary bone of a horse accidentally became fixed on a hook in the wall, and the animal, not being able to extricate them at once, he, as we know horses will do under such circumstances, forcibly ran backwards, throwing his weight upon the hook, which happened to be firm in the wall. In this position the hook must have been either drawn out of the wall, the teeth out of their sockets, or the jaw-bone fractured. In this instance the latter took place.

I saw the horse almost immediately after the accident occurred, and the first thing that struck me as peculiar was that the upper lip protruded considerably in advance of the lower one. On examining the parts more closely, I discovered that a fracture of the jaw-bone had taken place in an oblique direction from within outwards and backwards, terminating a little in front of the teeth. The membraneous covering of the partially displaced portion of bone was, fortunately, not lacerated, except for a short distance between the centre and lateral incisor teeth; nevertheless considerable hæmorrhage had taken place from the part so torn.

Treatment.—My first object in treating this case was to place the fractured bone in its natural position again, which was easily accomplished by using persistent pressure in the required direction. The membrane covering this part, which, as before stated, was not much torn, and which where it covers the roof of the mouth is very thick and tolerably dense, assisted materially in retaining the broken bone after it had been replaced in its natural situation, thus rendering it unnecessary to use any artificial means. If the membrane had been torn through to the extent of the fracture in the bone, I should have found it necessary to use some other means so as to have accomplished the same object; and had such a procedure as this been called for, the tusks, which in this instance were very long and firm in their sockets, would have been of the greatest use. To them I could have attached such agents as I might have found requisite—such as a piece of tape, strong twine, catgut, or wire—for the purpose of preventing the displacement of the fractured bone. We all know that, generally, the mare does not possess these aids.

Having replaced the fractured bone, I ordered that the

horse should be fed simply upon soft succulent food, such as scalded bran and crushed oats; but on no account to be allowed hay or straw to eat: also to place his head in such a position as to insure his not getting hold of anything with his teeth that would be likely to displace the broken jaw.

Based upon this simple mode of procedure, my prognosis was favorable, and I had the gratification of witnessing a perfect cure in a much shorter time than I at first expected. The importance of preserving the incisor teeth, especially in horses that have to be pastured, must be obvious to every one. If, however, the corner teeth only are lost, and with them a small portion of the wall of their sockets, the consequence will not be material; but if two or more of the teeth on either side of the mouth, even without a portion of the jaw-bone, are removed, then the horse, if turned out to pasture, and especially if the grass is short, might be unable to collect a sufficient quantity of food to support himself. The difficulty thus caused in feeding may be to such an extent, that the horse loses so much strength as to render him incapable of performing a fair amount of work. Then, again, as he would be legally unsound, his money-value would be much depreciated.

On the other hand, it would be equally obvious to any practical man, that a horse required to be fed from the manger and rack only, that the same defects which would interfere with his feeding at pasture would not at all impede this function when fed in the stable, nor would it tend to deteriorate his physical powers, or his actual money-value.

A veterinary surgeon, however, when examining a horse for purchase, ought to consider him capable of collecting food from all the usual sources that horses are fed from in a state of domestication; and, under any circumstances, he should notice and acquaint the purchaser of any irregularities in the mouth or loss of teeth he may detect, as well as the consequences that may arise therefrom. The buyer can then use his own discretion as to whether he purchases the horse or not.

Fracture of the Ramus of the Lower Jaw.

Fracture of this bone most often occurs to one of its branches, usually near to the symphysis, and frequently in an oblique direction. It may take place a little in front of the tusk, or it may be behind it; and occasionally it occurs in a line with its socket. From this cause the tusk may be loosened, and will have to be removed in consequence, losing

thereby an important agent which might have been of great service in securing the broken bone in its place.

As fracture of this part of the lower jaw is usually produced by a kick from another horse, the concussive force of which is intense, we may expect that the bone will be shattered into many pieces, which, however, is more likely to be the case should the horse that is kicked be an old one. The fracture may be only simple in its nature, or it may be compound—that is, a portion of bone may protrude through the softer structures which cover it; or, as before stated, it may be comminuted, which would considerably diminish the chances of a cure being effected.

Symptoms.—Deformity, more or less, generally exists; but, of course, this would vary according to whether the fracture was simple, compound, or comminuted; the amount of displacement which had taken place in either case, and the amount of swelling that supervened upon the infliction of the injury.

Tenderness of the parts always exists, and in some instances the pain is excessive, arising from the incisor and labial branches of the inferior dental branch of the fifth nerve being pressed upon or otherwise irritated by some fragment of the fractured bone. The normal movements of the jaw would also be interfered with, and mastication, of course, prevented. Crepitation may most likely be heard if the ear is applied to the region of the injury, especially should the line of fracture be oblique in its direction; a symptom which is often more decided in cases like this, than it is in fracture of many other bones in the frame. In many instances the ends of the broken bone override each other so far that their roughened parts do not come sufficiently in contact to produce this sound; a fact which is often overlooked in diagnosing such cases.

In fracture of the lower jaw, however, but little difficulty is found in forming a correct idea of the true nature of the case. Our prognosis, however, requires a much deeper consideration. The latter will be chiefly based upon the age of the horse, his general health, and the exemption of the fractured bone from previous disease.

A correct diagnosis having been formed, no time should be lost in resorting to such means as are best calculated to adjust and retain the portions of the fractured bone in their natural position. Suitable apparatus may possibly be at hand, but the chances are that it will not—therefore it must be contrived at once on the spot; and he whose mind is intuitively ready in finding means to an end in cases of

difficulty, is most likely to succeed. The appliances necessary for such a case as I am describing should be as simple as possible, yet efficient.

Splints will be required; and if ready-made ones are not immediately obtainable, temporary ones must be contrived, and which, if not suitable for permanent use, may nevertheless answer till better ones can be procured.

Padding will also be necessary to fill up the inequalities that may be expected to exist between the splints and the jaw-bone, so as to form an easy bed for the parts to rest upon and against. For this purpose, fine tow, or cotton wool, or, if these cannot be procured, old cotton or linen rags, carefully folded, will be a very good substitute.

Straps and bandages will also be needed, and strong twine; also whipcord, catgut, and metallic wire, may be often used to advantage. The use of these agents, however, I shall describe as I proceed.

Various materials are made use of to form splints suitable to put up fractured limbs, such as strong sole leather or thick pasteboard, either of which, if soaked a sufficient length of time in hot water, can be moulded to the form required. These agents can also be further stiffened by thin strips of wood applied and secured to their outer surfaces. Gutta-percha can also be treated in the same way. But, whatever the material that is used for this purpose may consist of, it should be made to fit the parts as evenly as possible, otherwise the full benefit we require will not be obtained.

Whatever kind of splint is used, means must be provided to hold it in its situation. For this purpose straps, partly elastic and partly not so, with buckles, will be required. Narrow linen bandages may, however, answer the purpose if straps cannot be procured; or they may be necessary in addition to the straps. The form of splint I should recommend, and which I propose to designate a *cradle*, is altogether different from those usually employed for this purpose. It can be made of various materials. Those that I have alluded to above will answer; however, strength combined with lightness is an important feature in its construction.

I will endeavour to describe the form of the *cradle*, leaving the mode of manufacturing it to those of my readers who may think proper to undertake it. I will state, however, that, in my opinion, every veterinary surgeon in full practice ought to possess at least two of them. Of course they should not be of the same size, for a very obvious reason.

Now, although only one branch of the jaw is supposed to be broken, nevertheless the *cradle* I am about to describe will, when applied, equally embrace both branches alike; thus making the sound one assist in steadying and retaining the fractured branch in the position we desire it to be in.

The *cradle* will be from fifteen to eighteen inches long; it should extend as far back as the angle of the lower jaw, and as far forward as to be within an inch of the anterior margin of the lower lip. Its sides should turn up, so as to embrace the outer surfaces of each branch of this bone, and be on a line with the upper margin of the under lips, beyond which they should rise to within a short distance of the zygomatic ridges. Posteriorly it should incline upwards and backwards, the centre of its underneath surface should be pushed upwards, forming thereby a ridge, which is to fill up the space between the rami as far forward as the symphysis of the jaw-bone. Its angles must be rounded off, and its borders perforated by holes or slits so as to enable the operator to apply straps, &c., to secure it in its place. If straps are used, they may be placed as follows:—One may pass from a little below the supero-posterior angles around the back part of the horse's head behind the ears; a second from the upper borders of the *cradle*, a little in front of the supero-posterior angles. This should pass across the brow, in front of the ears. A third, a small strap, may pass from one of the two straps to the other, between the ears. A fourth may proceed from the middle of the upper borders of the *cradle*, across the front of the face, a little below the orbits; and a fifth may pass across the nasal bones, sufficiently above the nostrils so as not to interfere with the horse's breathing. The two last-named straps should be partly elastic, the last one more so than the other, so as to allow the horse to open his mouth to a slight extent.

Should the fracture be compound in its nature, there will be required some holes in the cradle opposite to the seat of the injury. Perforations of this kind can be made after the cradle is manufactured.

As horses' heads vary both in size and form, it is not to be expected, even though a practitioner has two or three of these cradles on hand, that any one of them will fit the parts with that exactness he could wish. The inequalities, therefore must, as before stated, be filled with a padding of tow, or some other agent, in addition to that which should always, on all occasions, be used as a lining to the inner surface of a cradle or splint.

He who is called upon to treat a case of fracture of the lower jaw of a horse must not despair if he does not possess any other splints than those he is obliged to make at the time. The principal object, after the ends of the broken bone are brought in apposition, is to retain them there until they are united; and the practitioner should endeavour to accomplish this with as little inconvenience to the horse as possible.

A well-managed case of fracture of the lower jaw of a horse, resulting in a perfect cure, is recorded in the *Veterinarian* for 1853, page 195, by Mr. J. R. Cox, M.R.C.V.S., Mount Street, Grosvenor Square.

General Management and Treatment of a Fractured Lower Jaw-bone.

I will now suppose that a veterinary surgeon is called upon to treat a case of fracture of the inferior maxillary bone of a horse, and that he is provided with a *cradle* or *splints*, the necessary bandages, padding, &c. His first duty will be to see that the horse is placed in a suitable stall or box, in which to carry out the treatment he intends to adopt. His next duty will be to place the portions of the fractured bone in their natural position, and by means of the above-mentioned apparatus, or such other as the particular nature of the case may require, to retain them in that position until artificial means are no longer required.

The difficulty of reducing a fracture of the lower jaw (at the point alluded to above) is not very great, whatever the direction of it may be, as there is no muscle which could draw the detached branch of the jaw so far forward as to override the portion from which it was separated: indeed, considering the muscles that are inserted into its posterior angle, the tendency would be in the opposite direction.

The only direction the fractured end would be likely to take is an inward and upward one; but this would somewhat depend upon the way in which the force was applied.

The chief importance to be attached to the adjustment of the broken parts of the bone as nearly in their natural position as possible is, that the molar teeth may meet those in the upper jaw as evenly as they did before the fracture took place: otherwise after the bone has united mastication would be imperfect. We must, therefore, take every care in the management of the case that the branch of the jaw is not twisted or otherwise distorted.

I ought to have mentioned that in case there is much swelling or constitutional disturbance present, it may be neces-

sary to foment the parts for a time prior to reducing the fracture and placing the jaw in splints. This procedure will, of course, be determined by the practitioner at the time.

The fractured bone having been replaced and secured by such means as are considered best, the next thing to decide upon is the nature of the food the horse is to be fed with. Mastication, if possible, should be prevented; it will therefore be proper to supply the animal with such aliment as does not require any. For a few days, or until a temporary callus is formed around the fracture, the horse should only be allowed thin gruel, or fine bran and water; and even for some time after this he should have only sloppy bran mashes, which can be made more nutritious by adding oatmeal to them. He may take as much water as he likes.

It is important that his bowels be kept in a relaxed state; but this should be done, if possible, without the aid of medicine. An enema may occasionally be given if required; and boiled carrots mixed with his food will, in this respect, answer a very good purpose.

The progress of the case should be carefully watched; but the *cradle* or *splints* should not be removed oftener than is actually necessary, so as not to irritate the parts they are in contact with, or for re-adjustment should they become displaced.

Cases are recorded in which horses are said to have been put to work in as short a space of time as three weeks after the jaw had been fractured. Now, consolidation of the union could not have then taken place. Indeed, I should not allow a horse at the end of this period to eat hard food, fearing distortion of the bone might result therefrom. I should certainly advise that no case of fracture of the lower jaw, however favorably it may have progressed, should pass out of the hands of the practitioner under two months. The splints or cradle, whichever may have been used, may not be required longer than a month from the time when first put on.

Compound and Comminuted Fracture of the same Bone.

Either of these varieties of fracture of the branch of the lower jaw will require a somewhat different management to that of simple fracture, and our prognosis will certainly not be so favorable. In some instances we may even deem it advisable to recommend the horse to be destroyed, rather than put the owner to any expense in having it treated.

(*To be continued.*)

OBSERVATIONS ON THE CATTLE PLAGUE IN IRELAND AND THE CATTLE DISEASE IN THE ISLE OF MAN.

(*Continued from* p. 713.)

For a period of nine months, Ireland, by the adoption of stringent precautions, remained free from the pestilence which during that time extended its ravages among the cattle over the whole of England. A general feeling of security seems to have pervaded the public mind, and the terrible calamity that had fallen upon a country separated by a few hours of sea-passage only was apparently contemplated with that mixture of interest and indifference with which the people of one country might be supposed to regard the misfortunes of a friendly but distant population.

Traditionally, there were strong grounds for confidence. No records existed of the introduction of the cattle plague into a new country save by the transit of infected beasts; to prevent importation was to render the passage of the malady from one shore to the other impossible, according to the received opinions upon the subject; and, in addition, there was the remembrance of the immunity enjoyed during the previous outbreak of the same disease a hundred and twenty years ago, and there was also the forgetfulness which ignored the change that a century had made in the means of locomotion, virtually connecting in one unbroken line places which were formerly separated by practically impassable distances. In the recognition of the success which attended the system of prohibition we pay a well-deserved tribute to the wisdom of the Sister Isle, and if, in spite of all, the virus was in some one of many possible ways conveyed to her cattle, and that in a remote and isolated district, it only proves how subtle the infectious matter must be to enter in spite of all the vigilance which was exercised in the attempts at its exclusion.

In the early part of May, information was received that a disease believed to be cattle plague had appeared in the North of Ireland, at Drennan, County Down, a few miles from Belfast. Upon inquiry being made, it was ascertained that the disease had been prevalent in the district for something like five weeks before the report was received, and it is probable that, had it not been for the timely observation of Mr. Morrow, a large stock-owner in the neighbourhood, and who had had considerable experience of cattle plague in

Scotland, the affection might not have been recognised until more serious losses had compelled the public attention. In consequence of Mr. Morrow's report, an inspector was sent from Dublin; and subsequently the Director-General of the Veterinary Department attended and expressed an unhesitating opinion that the veritable rinderpest had appeared among the cattle of the country.

During the time the affection existed, medical and veterinary authorities gave testimony to its nature. Drs. Mapother and Foot, physicians who had been sent to England to study the disease, and Professor McCall, were among those who at various times investigated the cases and positively asserted that they were unmistakeable instances of cattle plague. Meanwhile, public opinion was divided; and so strong was the expression of a desire for further inquiry, that, in compliance with a request from the Irish Government, a special investigation was ordered by the Cattle Plague Department of the English Privy Council. In the course of the inquiry, the infected district of Drumra, near to Drennan, was visited, and there, on June 18th, the first case of the disease which had existed among the stock in that neighbourhood since the beginning of April came under observation. The animal, a red cow aged eight years, was reported to have been ill for three days. When examined, her aspect would have led any practical observer acquainted with the appearance exhibited by animals suffering from plague in the last stage, to have at once expressed an opinion of the nature of the disease. The animal was submitted to a minute examination, and in regular succession the symptoms characteristic of cattle plague were detected. The general appearance of the cow was sufficiently suggestive; but, independent of this, the discharge from the eyes, the peculiar state of the mouth, and the condition of the vagina were so marked, that, so far as symptoms could be accepted in proof of the existence of a disease, there was no room for doubt as to the character of the malady with which the animal was affected.

A *post-mortem* examination was instituted, and proved the absence of any disease of the internal organs excepting in those parts where the lesions of cattle plague are found. No complications of any kind were discovered that could modify the positive character of the indications afforded by the morbid parts: the lungs were, as is usual in plague, emphysematous, but in structure perfectly healthy; the digestive system was in all respects normal, save where the mucous membrane presented the ordinary traces of the ravages of

the malady. In the fauces, larynx, and trachea, and also in the membrane of the generative organs, were observable those peculiar changes which are collectively characteristic of no other affection but cattle plague.

In the various morbid appearances there was nothing that called for special remark; the changes were precisely those which are usually seen, and the whole evidence obtained during the *post-mortem* inquiry could only be estimated as corroborative of that gained by the observation of the symptoms, which were definite and conclusive in their testimony.

In the absence of any absolute proof of the contagious character of the disease, the inquiry, however, could not be concluded; the animals throughout the district had been killed and buried whenever it was known that they had been in contact with a diseased beast, and thus no opportunity was given for the exhibition of any infectious property which the disease might possess.

On the farm where the last case referred to occurred, there were three animals—a heifer, a yearling bull, and a calf—which had been in the same meadow with the cow when she was first seen to be ill. These animals, instead of being immediately slaughtered, were reserved in order that it might be seen whether the malady would appear in them; and that such would be the result could hardly be doubted, if the disease was of the same nature as that existing among cattle in England. Accordingly, the animals were left untouched, every precaution being taken to prevent persons approaching them, so that no further communication of infection should occur.

It was remarked, at the time of the examination of the diseased cow, that the heifer in the meadow was evidently not well, but it required a very careful and continued observation to distinguish any departure from her ordinary habits: she would occasionally be seen feeding lazily for a few minutes, then lying down, rising again, standing under a hedge away from her companions, and remaining in a listless attitude with her head hanging down. On the following day these signs were more decided; and on the day succeeding that, June 21st, the animal was obviously very ill, and was taken into a shed for the purpose of examination. The symptoms were found to be exactly like those shown by the cow: discharge from eyes and nose, peculiar condition of the membrane inside the lips, the cheesy exudation with raw-looking places, diarrhœa, prostration and shivering; the vagina was chocolate-coloured, and covered with the

purulent adhesive secretion so generally met with in the disease when fully developed : the temperature rose to 106·6.

That the course of the disease might be observed, the sick animal was isolated and carefully watched. On the next day she was found to be much worse, temperature 106·9, and every symptom increased in extent. On the following day the temperature had sunk to 101·8, and on the day after to 98·3, and the animal appeared to be rapidly sinking. She, however, rallied, the temperature rose gradually to 102, the discharge from eyes and nostrils became dried up, the congestion of the mucous membrane of the vagina was much less, and the disease had evidently begun to decline. The animal was destroyed and a *post-mortem* examination made, the results of which were perfectly satisfactory ; all the lesions of cattle plague were observed, without complication with any other morbid conditions.

The calf next became affected. On the day when the heifer was noticed to be decidedly ill it commenced to give evidence of sickening, and on the next day the symptoms of plague were well defined ; the animal died on the day after, and on being examined the internal organs were found to exhibit the ordinary lesions.

A few days after the death of the calf the yearling bull showed signs of being infected ; slight discharge was observed from the eyes, redness of the gums under the incisors, and an increase of temperature, 105·8 ; under these circumstances it was not considered necessary to wait for the further development of the disease, and the animal was killed. The morbid appearances which were found, upon *post-mortem* examination, were rather more marked than is usual in the first stage of the disease, particularly in the fourth stomach, the lining membrane of which was inflamed in patches, and in one portion cracked and curled up, as though by the action of fire. This animal was the last of those which had been in contact with or even near to any of the sick ones ; and presuming that no communication, even of an indirect kind, had taken place between these last sick beasts and healthy ones in the neighbourhood, there was no reason to apprehend any extension of the malady from this centre, and we were therefore in a position to review the whole of the evidence which had been collected from the commencement of the outbreak.

In the Drennan district the disease first appeared among the six cattle belonging to Mr. John McKee. As nearly as could be ascertained, one animal was found to be ill on April 8th, and died on April 12th ; a second was attacked on

April 13th, and recovered; another became ill on April 16th, and is reported to have died on May 4th, but whether it recovered from the disease and afterwards succumbed to the debility which followed could not be found out. Such instances, however, have been met with frequently.

The malady appears now to have passed to the stock of a neighbouring farmer, Mr. W. J. Erskine, whose four cattle were attacked on April 19th, April 28th, and April 30th, all of them dying after a few days' illness.

Mr. John McKee's remaining cattle were the next in order, one being taken ill on May 3rd, died on May 7th; and one on May 12th, which was killed on May 14th, together with one that remained healthy and the one that had recovered.

On May 10th we find that Mr. W. McKee's stock cattle were attacked; one died, one was destroyed in consequence of having the disease, and the three healthy ones were killed at the same time, May 14th.

Mr. Rea's cattle were attacked on May 11th; one was killed, having the disease, on May 14th, and the other was destroyed at the same time.

All these farms were close together, and the occupiers were in the habit of assisting each other in administering medicine to the sick cattle, and in skinning and burying the dead beasts, in complete ignorance of the nature of the affection which was destroying their stock; but on May 10th the malady seems to have passed a short distance out of the boundary in which it had been for some weeks confined, and extended to the farm of Mr. McCartney, at Cabragh, about one mile and a half from Drennan. Of the three cattle in this farm, one is reported to have died on the 10th May; one was ill on May 17th, and was killed on the 19th along with the remaining one, a calf, which is not stated to have shown any symptoms of the disease at the time.

From this time no more cases were recorded for a period of three weeks, and the district was declared free from infection in the beginning of June. Scarcely, however, had the cordon been removed than it became necessary to restore it in consequence of the discovery of an outbreak at Drumra, about half a mile from Drennan.

Information was received on June 7th that some animals were affected belonging to Mr. McKetterick, and on proceeding to the farm the inspector, Mr. Morrow, found two cows dead from plague; two were suffering from the disease at the time of his inspection, and he further ascertained that a cow had been buried some days before his visit, and two calves before that. Thus, in the interval of three weeks,

during which the district was supposed to be free from plague, there were seven animals attacked, and of these three had been buried and two more had died before any intimation had been given.

The two sick cows in Mr. McKetterick's farm were immediately destroyed; and after some little delay the three healthy cows and a calf, which made up the stock on that farm. On June 13th these cattle were killed and buried, but not before one or two of them began to show symptoms of disease. Meanwhile they had been pastured in a meadow only separated by a ditch from Mr. Erskine's field, in which his four cattle were feeding, and exactly two days after the slaughter of McKetterick's stock Erskine's cow became ill, and on the 18th of June was found to be suffering from cattle plague in the last stage; the other animals—the yearling bull, heifer, and calf—following in quick succession as already described.

From April 8th to June 26th thirty-five animals had died or been destroyed in consequence of the disease, and during this time it had attacked the stock on seven farms, causing the destruction of the entire stock of cattle in each place. Fortunately, the isolated position of the district, the small number of cattle on the infected farms, and the very prompt and admirable measures which were adopted, combined to limit the spread of the infection; but had the disease commenced its ravages among large herds instead of small ones, it is not difficult to imagine the mischief that would have resulted before the nature of the disease had been even suspected.

In the chain of facts bearing upon the question of the existence of cattle plague in the North of Ireland, no single link is absent, no more complete and satisfactory evidence could possibly exist than was obtained during the inquiry; but with the determination of the fact the investigation practically ceased. Everything connected with the origin of the outbreak remains in a condition at once unsatisfactory and obscure; the imagination may exercise itself in speculations upon possible causes, but of evidence there is nothing worth a minute's thought. It is probable that the infection was in some way imported from Scotland as the nearest point. It is possible, we know well, for the virus to have been taken from the remotest part of England, and in the space of a few hours to have been introduced into the system of an animal in the North of Ireland, but how it was done will probably remain for ever an unsolved problem. In England these mysterious outbreaks have become so common

that we scarcely pause to inquire how the disease arose, in the presence of the glaring fact that it has arisen.

It seems to be generally understood that the infection is subtle in its influence and eccentric in its course, travelling sometimes in a continuous line, at others passing over a number of herds and lighting upon one at a distance. The last twelve months' experience has established one fact that is worth remembering, viz., that the contact of healthy cattle with diseased ones is by no means necessary for the production of the malady. Many a farmer knows, by bitter experience, that the careful exclusion of all fresh stock from his farm does not always secure his herds from destruction, and that no precautions which ingenuity can suggest are infallible in their protective effects.

During the conduct of the inquiry in the North, attention was frequently diverted in consequence of the numerous reports received from all parts of the country of outbreaks of disease supposed to be rinderpest among cattle. These reports were investigated, and the cases generally proved to be either pleuro-pneumonia, or an affection which will be alluded to hereafter under the name of the Grass disease, or "murrain," in which the morbid changes discovered in the lungs, heart, stomach, and intestines are remarkably like those of cattle plague; or the malady known as black quarter, or a peculiar modification of it, which is not uncommon among young stock in Ireland. In fact, as might be expected, all the ordinary diseases of the country were classed under the one universal head of cattle plague. When, therefore, intelligence was received of an outbreak of cattle plague in the midland counties, no more than the usual amount of attention was paid to the notice: an inspector was sent down to report upon the nature of the disease, and in all probability the duty was undertaken as a matter of daily routine, the idea of existence of cattle plague never being seriously entertained. He proceeded to Enfield, County Meath, about twenty-two miles from Dublin; and the result of his inspection led him to return immediately and report to the Director-General of the Veterinary Department the existence of cattle plague among the stock on the farm which he had visited. A statement so positive, made in reference to a disease distinguished by such well-marked signs, would ordinarily have been received without question; but in this case there were so many interests involved, such vast consequences might be expected to result from the spread of the disease through the large herds in the principally grazing district of Ireland, that it was at

once determined to institute a searching inquiry, and in a most sceptical spirit it was commenced by an examination of the stock and premises of the farm where the disease was alleged to exist.

The farm was in the occupation of Mr. Connell, and was situated at Ballynaskea, near Enfield, County Meath. The holding was a small one, and the number of stock at the time the disease began was six. Mr. Connell was a "jobber," and his stock were allowed to feed by the roadside; the animals were in fair condition, and although the pastures were bare and the shed to which the cattle had access was dirty, there was nothing to excite any particular notice, or to account for a sudden outbreak of a malignant and fatal disease of a kind, it was admitted, that was unknown in the locality. In the shed were two animals—a steer lying dead on one side, and a heifer dying on the other—and it required very little consideration to decide that both were victims to cattle plague in its most virulent form. *Post-mortem* examinations were made in both cases, and in both it was evident that no other disease existed in the organism. The lining membrane of the mouth and fauces of the steer was a remarkable specimen, only to be compared to one or two peculiarly marked instances of the effects of plague in this structure that were examined at the early part of the outbreak in England.

From Mr. Connell's statement, it appears that the first animal was found by him to be ill on Friday, June 22nd, on which day he perceived the beast to be suffering from diarrhœa, with discharge from eyes and nostrils; it died the same night, and was skinned and cut up. The meat was eaten, and the skin sent to market. On the following Monday, three days after the death of the first steer, another was attacked, and died on Thursday; and on Wednesday evening a heifer was observed to be ill, and on the next day was found dying from cattle plague in the same shed in which the dead steer was lying. Three animals remained, and one of these showed symptoms of ill health; they were immediately slaughtered and buried, in the hope to prevent the further extension of the disease; although it was feared that the cattle on the next farm—in the occupation of Mr. Codd—some of which had come down to drink from a bog which was placed between the two farms, might have received the infection. A cordon was drawn round the district, and the animals within it were placed under the observation of the constabulary.

On Thursday, July 5th, six days after the inspection at Mr. Connell's farm, a heifer belonging to Mr. Codd gave

evidence of being unwell; she was immediately placed in a shed, and the case was reported the next day to the Veterinary Department. An inspector was sent down, and returned with the statement that the animal was suffering severely from cattle plague. On the following day she was found to be dying, and a *post-mortem* examination revealed all the usual lesions, those most marked being on the palate, the posterior part of the tongue, and the fauces. The rest of the stock on Mr. Codd's farm, eight in number, were slaughtered and buried, and no further spread of the disease took place. Since that time Ireland has remained free.

The total loss of stock, from April to July, was insignificant, amounting to 29 died or killed diseased, and 21 slaughtered healthy.

Subjoined is the tabulated list of infected places, and the number of cattle that died or were destroyed in consequence of the existence of the malady. (See next page.)

It will be seen, by reference to the dates in the subjoined table, that only a few days elapsed between each case in the North, from April 18th to June 25th.

The interval of three weeks, from May 17th to June 7th, during which it was supposed that no disease had appeared, does not really affect the estimate, because of the subsequent discovery of the fact that seven beasts had been attacked during the time on Mr. Ketterick's farm, five of them having died before the inspector's visit.

In County Meath the same thing was observed. The animals on Connell's farm were seized at intervals of two or three days, from June 22nd to 29th, when his stock was slaughtered, and the extension of the disease to the next farm was marked by the occurrence of a case exactly six days afterwards; and although the sick animal was immediately separated from the rest, two of these gave evidence of being infected before they were slaughtered, three days afterwards, the delay having arisen in consequence of the difficulty of obtaining men to assist in burying the carcases.

Nothing in the evidence collected would justify the belief that the plague among cattle in Ireland was of a less virulent type or less infectious than the same disease has proved to be in England; the limited extent to which it prevailed must be explained by reference to other causes than the mildness of the malady. Nor is it difficult to understand why it did not spread with the same rapidity as in England. Instead of commencing in the crowded London cowsheds, the disease only attacked cattle upon small farms in an isolated district;

Districts.	Occupier of Farm.	Number of Cattle on the Farm.	Number of Cattle exposed to Infection.	Attacked.	Result.	Healthy Animals slaughtered.
Drennan, near Belfast, County Down	John McKee	6	6	1, April 8 1, „ 13 1, „ 16 1, May 3 1, „ 12	1 died April 12 1 recovered, killed May 14 1 died May 4 1 „ „ 7 1 killed „ 14	1, May 14.
	W. J. Erskine	4	4	1, April 19 1, „ 28 2, „ 30	1 died April 21 1 „ May 1 2 „ „ 4	
	W. McKee	5	5	1, May 10 1, „ 13	1 died May 12 1 killed „ 14	3, May 14.
	Rea	2	2	1, May 11	1 killed May 14	1, May 14.
Cabragh, one mile and a half from Drennan	McCartney	3	3	1, May 10 1, „ 17	1 died May 10 1 killed „ 19	1, May 19.
Drumra, half a mile from Drennan	McKetterick	11	11	1, date not known 1, „ „ 1, „ „ 2, „ „ 2, June 7	1 died, date not known 1 „ „ 1 „ „ 2 „ June 7 2 killed „ 7	3 cows and 1 calf, June 13.
	J. Erskine	4	4	1, June 15 1, „ 20 1, „ 21 1, „ 25	1 killed June 18 1 „ „ 26 1 died „ 23 1 killed „ 26	
Ballynaskea, near Enfield, County Meath	S. Connell	6	6	1, June 22 1, „ 25 1, „ 27	1 died June 22 1 „ „ 28 1 „ „ 29	3, June 29.
	J. Codd	9	9	1, July 5	1 killed July 8	8, July 11.
4 Districts	9 Farms	50	50	29 Cattle attacked	29 died or killed	21 slaughtered healthy.

and instead of infected animals being sent to all parts of the country as soon as the disease was discovered, they were at once slaughtered and buried; and in place of an open market, there were cordons kept with Continental strictness.

Profiting by our experience, the Executive had recourse to those means of combating the disease which have been invariably attended with success when applied at the commencement of an outbreak. With a Veterinary Department already in action, a large force of constabulary of military efficiency, and, lastly, an infected district of small extent to deal with, no country could be more favorably situated for the purpose of at once arresting the progress of the disease.

The success which attended the system was the natural reward of the energy displayed. Nothing which experience could suggest was left untried: the cordons were strictly kept by the constabulary, who performed a laborious service, under circumstances which frequently amounted to hardship, with a cheerfulness and steadiness that deserves praise; and the people, after they once recognised the danger, not only acquiesced in the arrangements, but even assisted at them.

The great danger to be apprehended from an outbreak of a contagious disease in a new locality, is the concealment of the mischief until it assumes proportions that defy the attempts to exterminate it; but whenever the evil is discovered and honestly met, there is no reason for alarm. Experience has proved that although among infectious diseases cattle plague is one of the most virulent, it is also most easily controlled by the adoption of a proper system.

PRELIMINARY REMARKS ON LOCAL ANÆSTHESIA APPLIED TO VETERINARY SURGERY.

By Professor Tuson, Royal Veterinary College.

Soon after Dr. Richardson published the details of his ingenious and elegant method of producing local anæsthesia, the idea occurred to me that the process might be employed with great advantage in the performance of many operations on the lower animals; but it is only recently that circumstances have permitted my commencing experiments from the results of which an opinion might be formed of its value in the hands of the veterinarian.

Believing that Dr. Richardson's discovery will be the means of relieving dumb animals as well as man from

a vast amount of pain, and thereby further one of the noblest objects of the veterinary surgeon, I thought that an account of the scientific principles involved in the production of local anæsthesia, a description of the mode of applying it, and a record of cases in which it has been used, together with comments thereon, would form a contribution to veterinary literature acceptable to the profession generally. Accordingly, I purpose writing for this Journal a short series of articles in which the above-mentioned topics will be discussed, as I am now enabled to embrace the opportunities which present themselves at the Royal Veterinary College of practically determining in what manner and to what extent local anæsthesia may be rendered of service in veterinary surgery.

Although my experiments have not yet been carried out systematically, and are, in truth, only just begun, I cannot resist the temptation of at once placing on record the following cases in which local anæsthesia has been employed with perfect satisfaction and success.

Case I.—Brown mare, of very nervous temperament. Suffering from bursal enlargement in front of the off fore knee, which was fired in forty spots after the local application of anæsthesia. The mare was not cast, neither was the near fore leg removed from the ground; in fact, her legs were perfectly free. The mare submitted to the whole operation without flinching or otherwise manifesting the slightest uneasiness.

Case II.—Black horse. Had splints on off fore leg below the knee. Anæsthesia applied locally, and then the diseased part fired in three places. The horse, though his legs were free from restraint, stood perfectly still throughout the entire operation.

Case III.—The experiment made in this case was suggested by curiosity, and was performed for the purpose of ascertaining whether the mere application of intense cold would diminish or in any other way affect the lameness of a horse that had sprained the flexor tendons of the near fore leg immediately below the knee. The patient experimented upon was decidedly lame. The hair was removed from a space of about five inches by four, and the ether spray applied over the region of disease until the part was frozen. The horse, directly after this operation, was trotted, and it was found that the lameness from which he had been previously

suffering had almost entirely disappeared. About an hour and a half after this experiment was conducted the horse was trotted once more, when it was noticed that the lameness had returned, apparently with its original intensity. The effects of cold on the patient's lameness was doubtless due to the temporary suspension of nervous sensibility, and was as striking as that observed after the operation of neurotomy.

How far Dr. Richardson's mode of applying low degrees of temperature may be substituted for the methods at present resorted to by the surgeon, future experiment must determine.

In concluding these exceedingly brief remarks, I deem it but proper to state that the Messrs. Mavor conceived the notion of applying local anæsthesia in veterinary surgery simultaneously with myself, and that to these gentlemen I believe is due the credit of first giving the process a trial. Their early experiences, to which I shall hereafter refer, are recorded in the *Medical Times and Gazette*.

A CURIOUS CASE OF RUPTURE OF THE DIAPHRAGM OF LONG STANDING.

By Thomas Greaves, M.R.C.V.S., Manchester.

The subject of the above case was an aged cart-horse. He had enjoyed, as far as could be ascertained, good health all his life; had never had an attack of gripes or evinced abdominal pains whilst in the possession of his late owner, which was about three years. He has also been in regular work, and was in fair condition up to the day of his death, August 21st, 1866. However, it was observed that he never laid down. During the day of the attack of which he died he had performed a journey of several miles into the country, had eaten his morning and noon feeds as usual, and when returning home was observed to show some abdominal pain, but which was not violent. He was walked two or three miles, evidently in pain, and when got to the stable, about seven o'clock p.m., an antispasmodic draught was administered to him. The pain not subsiding, he had another, and subsequently another; he was also glystered. About half past eleven p.m. I was called to see him. Upon examination I considered it to be a case of enteritis; and there being a hard wiry pulse, about 60, I bled him freely, gave him more antispasmodic medicine, combined with a cathartic in so-

lution, stimulated the abdomen, and threw up fluid and tobacco enemas. But all was in vain; at three a.m. the animal died.

The symptoms in no way differed from those shown in ordinary cases of enteritis, only that the breathing seemed embarrassed, it being short and quick, but in no way resembling broken wind. The horse would frequently support himself against the boskin; but this indication of weakness was more apparent than real, as he would lean against it until he slid gradually down almost to the bottom, and then drop suddenly. This he did several times. Sometimes he would stagger and flounder forward, falling violently under the manger; he could, however, manage to get up again and again. His tenacity to life was astonishing, but he never once sat upon his haunches, which is very frequently a symptom of rupture of the diaphragm.

The *post-mortem* examination exhibited perhaps one of the most singular pathological phenomenon ever recorded in the annals of veterinary medicine. It was found that the entire stomach, and four or five yards of the small intestines, had passed through the rupture in the diaphragm, and were situated in the chest. The stomach was well filled with nice pultaceous food, and abutted against the aperture in the diaphragm. The intestines which were in the chest were strangulated, and intensely inflamed. The most extraordinary part of the case is this—the rupture, which was situated in the tendinous portion of the diaphragm, and about two inches to the right of the foramen sinistrum, must have existed *for months*, and *possibly for years*, and whenever the occurrence took place it must have been unattended with hæmorrhage. The lesion was not a simple slit, but it had assumed the form of an almost circular hole, the size of the crown of a hat, and every portion of the margin or edge of the aperture had become perfectly cicatrized, thickened, and scirrhous; the extreme ends were corrugated into slight puckers, possessing not the slighest evidence of recent lesion, nor any appearance of congestion or inflammation, either of the diaphragm, pleuræ, lungs, or stomach. Some portions of the stomach and bowels, also, had formed perfect adhesions to the diaphragm.

The conclusion arrived at by me was that the horse had lived and worked with his stomach occupying a space in the thoracic cavity; that it became filled, and digested the aliment whilst in that situation for an indefinite period, without, to all appearance, interfering with the action of the lungs or heart, or in any way with the animal's general

health, until, probably, from some accidental cause, such as too much water, for instance, spasm was induced, followed by strangulation, inflammation, and death.

I have preserved the morbid specimen, and would feel great pleasure in showing it to any one who may feel interested in the case. I should also feel obliged by the Editors of the *Veterinarian* making any observations for the purpose of more thoroughly elucidating this, to me, most interesting case.

[The above case, as described by Mr. Greaves, is not only a very interesting one, but also a very remarkable one. If it was, as he supposes, that the stomach and a portion of the intestines had for a long time occupied a place in the thorax, they must necessarily have considerably embarrassed the function of respiration. This, we should think, could not have been overlooked by the owner of the horse or by those who were in the habit of using him. We have more than once witnessed the peculiar breathing of a horse labouring under phrenic hernia, and have always found it quite different in character from that produced by disease of any organ in the chest, or the results arising therefrom. Accurately to diagnose a case of phrenic hernia, even if it is of recent occurrence, cannot be expected; and with regard to a chronic one, like the above, for instance, it would be altogether out of the question. Had the peculiarity in breathing, which I think must have existed, been mentioned to Mr. Greaves, it might at once have given him a clue as to the nature of the malady; nevertheless, in the absence of such information, we are induced to think that he had a suspicion that some abnormity of this kind did exist; for in his communication he states that "the horse never once sat on his haunches, which is a very frequent symptom in rupture of the diaphragm."

It would be futile for us to attempt to solve the question as to how or at what time the rupture in the diaphragm was caused. An opening in it, however, of the magnitude mentioned by Mr. Greaves having been produced, we can readily understand that some of the abdominal viscera would protrude into the cavity of the chest, and very likely become strangulated, as was the case in this instance. No treatment whatever could have been of any avail; but what practitioner, we would ask, would have withheld it as long as the slightest chance of doing any good existed? Mr. Greaves did not; and we fully accord in the course he pursued.

These few remarks may have somewhat the appearance

of criticism rather than of attempting to elucidate any of the phenomena attending the case. To some extent this may be true, and is to be accounted for through our inability to throw any light upon a case so singular and unusual as the above. But we have no difficulty in understanding and appreciating the zeal with which Mr. Greaves brings before the profession anything that he considers interesting or instructive. This case is one, no doubt, of considerable importance, and would have been even more so had Mr. Greaves known the history of the horse prior to his being attacked.—Eds.]

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 721.)

The next disease in order is that termed "Spavin." In this, as in many other diseases, much diversity of opinion exists as to its definition. As I have before remarked, it is well to be able to render a proper and even scientific definition of a term, but in horse phraseology this is often found not practicable. Veterinary nosology seems not to have kept pace with that of its sister seience, merely from the fact that so many of its practitioners are careless about everything relating to the practice of the profession, if we except £ *s. d.*; and that if a work were compiled to suit the wants of some members of the profession, it would be a losing game in point of finance.

As regards the word spavin, I do not see any reason why it should be retained. It leads the looker-on to the hock-joint, as the place where spavin usually is found, but it is far from affording any information of a scientific or satisfactory character as to its nature. There is no need of a name. Spavin is an abnormal deposit upon one or more bones constituting the hock-joint. It may be situated upon one of the cuneiform bones or upon one of the metatarsals, so that a person pretty well informed in horse matters is not made over-wise by the use of the word. There may be lameness in the hock, and no perceptible growth either seen or felt; still it is spavin—"occult" spavin. It appears to me that, as the term to which I have alluded is in the mouth of every *beer-drinking nagsman,* it would materially serve the respectability of the profession if it were abandoned. Spavin

is a growth or deposit of osseous substance, situated upon a certain part or parts of the hock-joint; but it does not give an idea of the *precise* situation of it any more than the term "splint" does. To state that an osseous or bony tumour exists upon a certain part of the limb, would be more in accordance with science at the present day than the vague term now in use. And I am certain that such a description of a malady reads better upon paper when a certificate is required than the old and vulgar term spavin. Besides, there are other affections of the "tarsus," which are never spoken of at all but as spavin; and it would be better to name the character of the infirmity as well as the situation, than to call it by the name of "spavin." It is common for horse-dealers and others to say of a horse with stiffness of gait that he has a spavined hock. They may not be far from the truth, but at the same time they are totally unacquainted with the nature of it. If I were requested to give a definition of spavin, I should do what my predecessors have done; but in order to qualify it, some remarks would be made in reference to diseases of the hock generally. I know no species of lameness more occult than some of those which implicate the hock-joint. I happen to possess some beautiful specimens of hock disease, which I have collected during my practice, and most of which have been the means of throwing additional light upon hock lamenesses.

One specimen reveals to the eye that the three cuneiform and the cuboid bones are cemented together, all the others being free. The second case proves that all the bones comprising the hock-joint, except the calcis and astragalus, are as one. In the third, the bones are the same as the former. In the fourth, all are distinct and separate. Specimen No. 1 was taken from a cart-horse, which was regularly shod at my forge for some years; he had been fired prior to the purchase, but was lame. He did as much work as was required of him, and no treatment was adopted. The tibia was fractured by means of the entwining of a chain about his leg, caused by kicking, and he was destroyed. This case is recorded in the thirty-second volume of the *Veterinarian*, page 130. The four bones of the tarsus, viz. cuboid and cuneiform, are cemented together; the others are as we usually find them, the outer metatarsal distinct, and the internally placed adheres to the large bone. In this it will be remarked, that there was motion both above and below the four cemented bones. The second specimen has other peculiarities. It is the off leg. The four bones above named in specimen No. 1 and the three metatarsals are

amalgamated, and the ligamentous structures exterior to the joint are converted into semi-osseous matter; there is a large exostosis at the usual seat of what is termed spavin, two inches and a half in length, which commences at the small cuneiform and upper part of the small metatarsal, and runs round the metatarsal magnum for the length before named. All the lateral ligaments have become bone. The space at the junction of the cuboid and cuneiform magnum superiorly is filled with osseous matter, and so are all other available spaces. This animal was excessively lame. The length of the metatarsal magnum is ten inches and a half. This is remarkable, and worthy of record. Another bone of the same name, taken from a mare two inches less in height, and only four years old, is exactly twelve inches in length. I mention this fact because many persons believe, when speaking of long and short canon bones, that most of it is imaginary—no such differences are met with. No. 3 specimen, was taken from a bay mare, the property of the late Marquis of Waterford, named Strawberry. She had been hunted several seasons by his lordship, and was a great favorite. Having unfortunately been staked during the last season of her career, near the fetlock on the near hind leg, she was treated at home, and an open joint resulted. Finding the case one of extraordinary difficulty, I was requested to go and see her. The fetlock-joint was eight times its natural size, or more, and the wound contained many sinuses. She had been visited by a horse, and his lordship was anxious to save her, if possible; she was therefore sent to my place in a van (another time I may relate the treatment of this case, as it is one of great interest). The sinuses, by the treatment adopted, were closed, and so was the joint, but there was extreme immobility of the fetlock-joint. His lordship requested an opinion as to her being in foal; being under the impression, after an examination, that she had not conceived, I was instructed to have her destroyed. She was consequently killed, and the limb removed for examination. In another place I have described the appearance of the os suffraginis; it, and the metatarsals, with their four bones superiorly placed, are now before me. These bones are so well defined that it is no difficult matter to see to what extent the deposition of bone has gone. The mare being a first-class huntress, always in her place, and never known to be lame or supposed to have any sign of disease about her hocks, makes me anxious to give all the information I can in reference to that once valuable mare. She stood 15·3, was very well proportioned, and used to

carry about sixteen stone to hounds. The large metatarsal bone measures exactly ten inches and a half in length, four inches at the inferior part, in circumference, six inches at the superior part over the small bones, and four inches at the middle of the shaft. The length of the small metatarsal bones, is four inches and three quarters.

The second is from a well-bred one, but not thorough-bred, as Strawberry was. The large bone is ten inches and a half exactly, four inches and a half in circumference at bottom, seven inches and an eighth at the upper part, including the exostosis and small metatarsals, and four inches at the middle. The four-year-old half-bred mare, fifteen hands one inch high, shows the large metatarsal twelve inches long, the two smaller seven inches in length. The lower part of the large bone measures six inches round; the upper part, without the bones, six inches and a quarter, and the middle four inches five eighths. Thus it will be seen how vast is the difference between a thorough-bred mare's bones and those of a half-bred. I don't mean to assert this is always met with. I take the Strawberry mare as one nearer perfection than the half-bred simply because she lived to a good age, and worked wonderfully hard as a hunter, and nothing gave way. In the other case the mare was but four years old; all her bones were more or less diseased, and the tibia of this leg was fractured during the operation of firing. The tarsal bones are as soft as chalk.

To proceed with the Strawberry mare. This part of the limb was boiled for several hours (as all my dried specimens are), therefore the bones may be supposed to be in the same position as they were during the life of the mare. As I before remarked, they are all seen except the two large cuneiform bones; they are so sealed together that it is not easy to discern the union. The front of the joint is well bound with strips of osseous substance, cementing the bones as thoroughly as an artist could do it. Immediately under the head of the inner side of the large metatarsal I observe an exostosis, roughened in its character, three quarters of an inch in length, and which rises about the one eighth of an inch from the bone; it does not touch either the small metatarsal or the cuneiform bones, which will, I think, account for its not producing lameness. Whether or not there was any peculiarity of action at that time I am unable to say, as this specimen was obtained ten years ago. It may be inferred that my eyes were not then so much open as they have been subsequently; and it is more than probable I should not have observed the peculiarity of action, neither should I have known to what it was referable. If a piece

of leather, the thickness of the common integument and other soft parts found upon the limb during life, were made soft and stretched over this exostosis, it would be impossible for a person to say if any structure of an abnormal character were underneath. Coupling this with the action of an animal, which may or may not be good, it is more than probable that such would be passed as perfectly sound. Nothing could be seen, nothing felt; therefore the examiner would never suspect there was anything abnormal upon the joint. Having seen so many of these cases, both alive and dead, is the reason I have so frequently adverted to "*action*." I am convinced that it is *action*, and action alone, that will enable the veterinarian to understand many of the diseases to which our equine patients are liable.

The fourth specimen, to which allusion has been made, is one of peculiar, if not extraordinary, interest. A gray pony gelding was sent a distance of ten miles for me to examine as to lameness. The owner wrote, stating that he had been lame a considerable time, and it was supposed he was lame in the fetlock-joint; but, if considered that he was lame in the hock, I was to fire it and send the animal home. A careful examination was made of the limb; no deposits were to be seen or felt upon any of the joints, but there was a peculiar or imperfect gait, which I considered was referable to disease of a very extensive kind situated in the tarsus, termed, I think, "occult spavin." The animal was fired, not severely, but sufficiently, and sent home. In the course of three months the man in charge was desired by his master to get him ready for his phaeton, which he commenced by administering a dose of physic. In two days afterwards the servant told me the pony was purging very much, although he had given him but four and a half drachms of aloes. I sent appropriate medicines, and the next day was requested to see him. I arrived only just in time to see him die. He had, in fact, been purged to death. I was told he was perfectly sound, and that his master was going to drive him in a few days had he lived; and, moreover, the groom pointed to the fetlock-joint, which had, as he believed, been the part affected. My reply was to the effect that I was right and he was wrong, and that an opportunity would soon offer itself for the true state of things to be revealed. I removed the limb, and took it home with me. It is now before me. I scarcely know how to describe the bones of this tarsal joint. Their shapes are as perfect as possible to conceive; there is no earthy or other deposit to be seen; their colour, however, is something singular, as near to that of *yellow*

ochre as anything I can imagine. The under articulation of the upper cuneiform and the upper articulation of the lower bone are, as it were, worm eaten, ulcerated on two thirds of their surfaces; the holes are, some of them, one eighth of an inch deep. The same appearances of disease are seen between the large metatarsal and cuneiform bones, only not to so great an extent. Here, then, is another of the many cases I could cite, if needed, to prove the difficulties we, as veterinarians, have to contend with in our practice Nothing to be seen, and nothing felt, to lead one to mark the seat of disease. There is, as before hinted, and it cannot be too often repeated, one thing which will point the way to a detection of the diseased part, and that is—ACTION.

(*To be continued.*)

THE NERVE OPERATION.

A Communication from Mr. W. G. TAYLOR, M.R.C.V.S., Nottingham.

GENTLEMEN,—Will you allow me, through your Journal, to call the attention of members of the profession to a method of simplifying the incision through the skin in the nerve operation? It is to make it with the common seton scissors. You will find the skin readily admits of being taken up between the thumb and finger (when the animal is cast), so that the incision can be made in a line with the nerve. This is the way in which I have operated lately in several cases, and its advantages are that you have in a moment a neat clean cut, perfectly through the skin, and either large or small, as you may wish. Making the wound through the skin with the ordinary neurotomy knife, I have always found to be the most difficult part of the operation. You can never do it with one cut, and are momentarily expecting a struggle. I think any one who operates with the scissors, as I have advised, will never use the scalpel again for dividing the skin. I may add that I never put a bandage on after, but give a dose of physic immediately after the operation, which prevents the leg swelling so much. I also give directions for the part to be kept wet with chilled water. Almost every case thus operated on unites by the first intention.

I am, Gentlemen,

Yours, &c.

EXTIRPATION OF THE UTERUS OF A POINTER BITCH.

By Thos. M. Leech, M.R.C.V.S., Bakewell.

Bakewell; *Sept. 5th*, 1866.

On Friday, 17th August, I was called in to see a pointer bitch, the property of Mr. Greaves, Rutland Arms Hotel, Bakewell, which had pupped several days before, and the uterus had become everted. It had been returned several times before I saw her, but with no good effect. The portion everted presented a very swollen and congested appearance, and I found it impossible to return the parts again to their proper position. Upon careful examination, and after passing the catheter, I found that the bladder was included in the mass, therefore I made an incision into the body of the uterus, and found that therein was also a knuckle of intestine as well as the bladder. I returned the bladder and intestine into the cavity of the abdomen, and raised the hind parts of the bitch, so as to keep them there whilst the operation was performed, which was done in the following manner:—A needle armed with a strong ligature was passed through the neck of the uterus, behind the meatus urinarius, including one fourth of its substance, which being tightly tied, the needle was again passed through another fourth, and tied in the same manner; then again through another fourth in the same way, leaving one fourth up to this time free. The whole of the neck of the uterus was then included in one strong ligature, *which closed the aperture into the abdomen*. After this was done the parts posteriorly to the ligatures were removed with a scalpel, and the parts operated upon returned into the vagina. No bleeding of any consequence took place; the parts were sponged with cold water; to the bitch a dose of opium was administered, a good dry bed given, and no food that night. The opium was repeated on the following morning, and a little bread and milk given, of which the animal partook freely. This treatment was continued for several days, no untoward symptoms showing themselves, when the animal was allowed more and better food. She was kept at my infirmary, and discharged on the 1st September perfectly healthy, and showing not the slightest signs of having undergone so violent and dangerous an operation.

This case shows what may be done in an emergency; and

I should not hesitate to perform the same operation upon a larger animal, supposing that other measures for the return of the uterus had failed. If a ligature had been passed round the organ without my having ascertained what was contained in the exposed mass, death must certainly have taken place, and that shortly, seeing that it contained both the bladder and a portion of intestine.

Mr. Greaves, V.S., of Altringham, and Mr. Darwell, V.S., of Knutsford, both saw the animal three days after the operation, and also the uterus which was removed, and which I have now in my possession preserved in spirits.

CANCER AND AMPUTATION OF THE PENIS OF A PONY.

By D. B. Howell, M.R.C.V.S., Reading.

On February 7th last I was requested by Mr. Row, of this town, to examine a black pony belonging to a friend, and used by him for its keep. I found the animal constitutionally in good health, but the sheath was enlarged, owing to the presence of a cancer on the penis, about two inches from its point. It was of an ovoid form, about the size of a cricket ball, and from it exuded a very offensive purulent discharge.

On inquiring into the previous history of the case, I was informed that the animal had been in his owner's possession for six months, and nothing had been observed unusual with him until a fortnight before, when a very peculiar smell was first perceived to exist. From the first he had never been seen to lie down, and only drank water sparingly once a day. Of course this cancerous growth took longer than two weeks in its formation; and seeing at once that the only hope of relief would be to amputate the penis, I prepared him for the operation; and on the 12th I cut off about six inches of the organ. Blood trickled from the wound for three days afterwards; but subsequently the case progressed favorably. The pony laid down every night; the urine passed freely, and in ten days he took a little walking exercise, and light work on the seventeenth day; in fact, it was considered a very successful case.

On March 7th the animal went out as usual, but after standing an hour in the stable, the sheath began to swell all

at once, and the appetite changed from a hearty to a fastidious one.

The following morning he was removed to my stables, when it was observed that the swelling had diffused itself along the abdomen and up the sides, making him appear almost as square as a box. The sheath was still more enlarged, and its orifice entirely closed, but not the least evidence of pain manifested. The treatment consisted of fomentations and steaming by a modification of the Turkish bath twice daily, and the exhibition of sedatives and diuretics alternately. The enlargement increased daily till the 12th, up to which time the discharge of urine had been suspended; and from the shortness of the penis a catheter could not be introduced, even if the sheath had not been so much enlarged.

On that day I succeeded in dilating the opening by breaking down the cancerous growth, when fully a gallon of urine, mixed with purulent matter, cancer cells, and blood escaped. I then introduced a curved tube, hoping that he would be able to micturate through it; but as it caused uneasiness I removed it. By the next morning the swelling had entirely subsided, except in the off hock. No material change occurred until the 16th, when, for the first time, pain was evinced.

During the day the pulse rose to 84, and the animal presented a most forlorn appearance; he rapidly became worse, and early in the night he died.

Post-mortem examination.—The apex of the cæcum caput coli showed traces of the disease, as well as certain portions of the mesentery. The heart, kidneys, liver, spleen, and lungs were free from cancer; the two first-named organs, however, were very large. On removing the penis with the sheath and bladder, a complete network of cancer was revealed, burrowing through and under the various muscles from that point forward to the sternum, principally on the off side, and connected with that lining the sheath. Some of the cavities contained a pint of purulent matter, but communicated with each other either directly or indirectly. The bladder was about four times its natural thickness, of a dark dirty colour, spotted over with small cancers in various stages of growth, as was the urethra some little distance down. That portion of the penis dependent from the body was healthy. I may here state that on the 7th I wished to destroy the animal, as I foresaw it was a hopeless case, but the owner would not consent to it.

What I consider to be the great peculiarity of the case is,

the freedom from pain enjoyed by the animal up to the last day of his existence, when his sufferings became acute, as all medical writers agree in the great pain attendant upon severe cases of cancer.

No treatment could have been of any avail in such a diffused case of cancer; in fact, unless in its very earliest stage, success would be doubtful in any case.

In the *British Medical Journal* for April, 1866, Dr. Barclay, of Banff, publishes his treatment of cancer in cases where other remedies had rather increased than decreased the malady. He employed a lotion consisting of Acid. Citric. ʒjss in Aquâ ʒviij, noticing (to use his own words) "that when it was applied to wounds partaking of the characters of cancerous sores in a most marked degree, the thick, serrated, and everted edges did not seem quite so thick, serrated, or everted, but looked thinner, softer, and with less induration around them." Acetic-acid lotion, gradually increased in strength from common vinegar upwards, produced in this way a much more marked effect, for the edges began to thin down much more rapidly, granulations of a seemingly healthy character arose in the centre of the wound, all fœtor disappeared from the discharge, and even attempts at cicatrization began to take place, sufficient in several of the smaller ulcers to close them in altogether.

Acid. Carbolic. ʒjss—ʒij, Spt. Vini rect. ʒj, Aqua ad lb. ij, produced the same effect as Acid. Citric.; but applied in a more concentrated form, the effect was a most vigorous eating away of the tumours, and with much greater rapidity than the two acids previously mentioned. When the weak solution was used cicatrization was seen going on in many of the sores, but none when the strong acid was employed. From the foregoing it appears that the latter agent is the most efficacious in the treatment of this dreadful malady; therefore would it not be worth the while of our profession to employ it in our patients, using a solution containing of Acid. Carbolic. from ʒss to ʒj, Spt. Vini rect. ʒij, Aqua lb. ij, and diluting it as progress was made, so as to allow cicatrization to take place? The constitutional treatment would vary according to individual cases.

If preferred, the other acids may be employed; but if I may be allowed to give an opinion, I should say use that from which the greatest benefit is derived in the human subject.

I may be allowed to add that the same journal recommends the exhibition of citrate of soda in diabetes.

ROYAL WARRANT FOR ARMY VETERINARY SURGEONS.

A Communication from "C. S."

Sirs,—I am very happy to see that the Council of the Royal College of Veterinary Surgeons has ordered the Royal Warrant for army veterinary surgeons to be left out in the next edition of the 'Register of the Members of the Veterinary Profession,' as it was decidedly out of place there, and had nothing to do with a simple list of members, which is all that is required in a register.

This warrant also appears to me to require a little explanation, which I have never seen afforded to the student in any veterinary work. Any one reading the warrant would think that, being eligible after five years' service for promotion to the rank of first class, with the pay and privileges attached, he would be afforded an opportunity of passing the examination alluded to there; but such is not the case, as there are at this time a great many veterinary surgeons of ten, and some of twelve years' service, who have not been called upon to pass their examination, and consequently they still continue to receive only the pay of a veterinary surgeon, which makes a very great difference in a pecuniary point of view. The difference will readily be seen on reference to the scales of pay laid down in the warrant.

Many people would also think that they were to receive ten shillings a day without any deductions; but if they be so unfortunate as to enter the service they will find, if they are in a regiment, that there is eightpence halfpenny a day for each horse stopped for forage, and this, with band and mess subscriptions, income tax, medicines for their own horses, &c., reduces the pay to eight shillings per day for the first five years.

At present the number of first-class veterinary surgeons is said to be limited to twenty-five, and at the present rate of promotion veterinary surgeons entering the service now will never attain the rank of first class, which will keep them on the second-class scale of pay during their whole service.

I am, your most obedient servant.

To the Editors of the 'Veterinarian.'

Facts and Observations.

Mr. John Adam McBride, M.R.C.V.S., late Lecturer on Veterinary Materia Medica, &c., Glasgow Veterinary College, has been appointed to the Chair of Veterinary Surgery in the Royal Agricultural College, Cirencester.

Diseased Meat.—In the last five years no less than 939,016 lb. of meat have been condemned in the city markets as unfit for human food—viz., 79,662 lb. in Aldgate Market, 146,846 lb. in Leadenhall Market, and 712,508 lb. in Newgate Market; 385,000 lb. consisted of good meat that had become putrid; there were 505,000 lb. of diseased meat, and 49,000 lb. the flesh of animals that had died from natural causes or from disease. This statement relates only to the city proper; in the metropolis outside the city there is no effective supervision, and animals in the most diseased condition may be slaughtered and sold.

Tannin a Substitute for Cinchona.—Dr. Leriche has ascertained that tannin, or tannic acid, may be substituted for cinchona, as it is an excellent antiperiodic, and possesses real efficacy in the treatment of all intermittent fevers of a simple quotidian type. Also, that the facility of its extraction and its low price render it preferable to the sulphate of quinine, or at least to the other derivatives of cinchona, while at the present time it constitutes the best of indigenous febrifuges.

Preservation of Meat.—Dr. Redwood's process for this purpose consists in immersing the substance to be preserved in a bath of pure paraffine, heated to about 250° F. Meat thus treated rapidly loses the air and moisture it contains, leaving the juice thereof in a concentrated state. When required for cooking, the paraffine has to be removed, first by mechanical means and then by boiling in water, when the paraffine rises to the surface, after which the meat is to be dried in a cloth and cooked in the usual way; less time sufficing for this.

Action of Poisons on Plants.—The late M. Reveil ascertained that certain poisonous substances proved much more deleterious to plants than animals. The mineral acids, and even the citric and tartaric acids, quickly destroy the plants absorbed by them. In like manner, many saline solutions affect plants that are not injurious to animals. Organic

alkalies, however, are harmless; and the salts of morphia, codeia, narcotine, strychnine, and nicotia, poisonous to animals, are not so to vegetables, while atropia seems even to be beneficial to their growth.

Soda obtained from common Salt.—Mr. W. Wedon has taken out a patent for the above, which consists in placing within a vessel capable of resisting the required pressure an equivalent of common salt, and another of carbonate of magnesia, with a small quantity of water, and then pumping into the vessel the carbonic acid formed by causing atmospheric air to traverse coal in a state of ignition. The carbonate thus becomes bicarbonate of magnesia, which dissolves in the water, and then decomposes the chloride of sodium, chloride of magnesium, which remains in solution, and bicarbonate of soda, which precipitates, being formed. The whole process lasts but a quarter of an hour at most, and the cost is only that of the coal used in forming the carbonic acid. A moderate heat drives off the second atom of carbonic acid from the bicarbonate of soda, changing it into carbonate; and the magnesia may be recovered from the chloride by evaporating the solution containing it to dryness, and raising the residue to a temperature below redness.

Hippophagy has become a recognised subject of legislation in Paris. Special slaughter-houses must be erected for that "*viande*." The joints must receive an official stamp. Horses which have died a natural death, sick horses, and horses slaughtered when in a state of fever, or wounded, or in an extremely bad condition, are not to be allowed for food.

Sulphate of Iron as a Disinfectant.—Mr. W. G. S. Mockford, in a letter in the *Chemical News*, says that the commercial sulphate of iron has been generally used in France for the disinfection of fecal matters of the bovine race affected with typhus, in order to arrest the ravages of that terribly contagious malady. Also to purify stalls, slaughter-houses, ditches, and all places where noxious emanations arise. When the cholera was at Marseilles great quantities of this salt were used; and likewise in Switzerland and Germany, with perfectly satisfactory results. He is of opinion that if cattle that have died of rinderpest were saturated with a solution of the sulphate of iron they might be removed from place to place with perfect safety.

THE VETERINARIAN, OCTOBER 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ADDRESS TO STUDENTS.

As we have in former years essayed to do, so would we in this, even though it be at the risk of merely repeating what has been before advanced, or may emanate from the chair of the Professor in his inaugural address at the Royal Veterinary College on the day of our issue from the press. Our object being the same, there exists no fear of any clashing of opinion between us; and as the temple of truth may be reached by different roads, so we would for a time walk therein together, hoping thus to become a guide to others by proffering suitable advice.

It has been well observed that—

"There is no period of existence, probably, so stimulating as the day on which a young man enters upon that career which he regards as the grand machinery for advancing him in fortune, promotion, and happiness. Between the past and the future is a great gulf fixed, and the probationary stage of apprenticeship, or matriculation, or walking the hospitals, or putting on his spurs, is the bridge which is to span over these two epochs, and enable him to reach that promising Goshen which is looming in the future. Every man who has experienced an introductory examination remembers how his heart fluttered, how his hopes rose and sank, how the golden prospect his enthusiasm painted was veiled alternately with a cloud of despondency, how the promise of one moment was dashed with the diffidence and distrust of the next. He recollects the infinite number of castles in the air he built daily, to be dissipated the same hour they were created; and yet, strong in faith, how he pushed forward to pluck the golden fruit which seemed to hang in the garden of the Hesperides to reward the bold, the studious, and the successful. Who cannot carry back his memory to some such day, whether it be he who handles the trowel, or he who pounds with the pestle and mortar—the divine who has just entered on his first term, or the embryo surgeon who has signed the articles of

obedience. It is to every young man an event of more than ordinary importance; it is his first great step in life; it is the passage that is to introduce him to the real world; it is the fleshing of his untried sword; the threshold of the campaign that is to end in disaster and defeat, or victory and glory. He longs for it with an ambitious spirit, and when it comes hails it with a palpitating pulse."

"Ah! who can tell how hard it is to climb
The steep where Fame's proud temple shines afar?
Ah! who can tell how many a soul sublime
Has felt the influence of malignant star?"

It must be conceded that the period usually devoted to the study of any division of science is one big with importance. Its commencement may be said to be the point on which the future of the aspirant turns; it constitutes an epoch in his existence demanding serious consideration and a firm resolve, but nothing more. No sacrifice is really called for, only a little self-denial, and even that not for a very long time. We speak here only of College studies; since the wise man is always a student, he is ever learning.

First we would say, cultivate knowledge, not only that it may advance your interests in life, but because the human mind must be employed upon something, and if it be not occupied in noble pursuits it will be with those that are ignoble, and consequently debasing. Of this be sure—in the acquirement of knowledge the mind becomes both healthy and strengthened, and the character of the aspirant raised. Idleness is not only irksome, but injurious in every sense. Moreover,

"A want of occupation is not rest;
A mind quite vacant is a mind distressed."

Secondly, we would observe, that to derive any real benefit from your studies, it is necessary that the mind be duly impressed with their worth. It is not enough that you rise early and sit up late, if the powers of the mind are not called into exercise; or that you take notes of all that has passed in your daily routine of duties, if you do not reflect, and that deeply, too, upon what you have been doing, and record upon the tablet of the memory facts and

observations, the result of contemplative thought. Locke, in his 'Essay on the Understanding,' remarks :—

"This is certain, that whatever alterations are made in the body, if they reach not the mind; whatever impressions are made on the outward parts, if they are not taken notice of within, there is no perception. Fire may burn our bodies with no other effect than it does a billet, unless the motion be continued to the brain, and there the sense of heat or the idea of pain be produced in the mind, wherein consists actual perception. How often may a man observe in himself that whilst his mind is intently employed in the contemplation of some subjects, and curiously surveying some ideas that are there, it takes no notice of impressions of sounding bodies made upon the organ of hearing, with the same attention that is necessary for the producing the ideas of sound. A sufficient impulse there may be on the organ, but it not reaching the observation of the mind, there follows no perception; and though the motion that uses to produce the idea of sound be made in the ear, yet no sound is heard."

And as with hearing, so it is with seeing. The eye may be intently fixed upon the page, and leaf after leaf turned over, yet there is no true reading, for the mind is not properly engaged in the act. In like manner we may, and often do, gaze upon an object and not see it, simply because the mind is otherwise occupied. It is not made to *feel*, and therefore is insensible. It is alone by thinking that knowledge is made a part and parcel of the mind, and this it is which constitutes real knowledge.

It has been asserted by one who, by the energy of his mind has risen to fill nearly the highest legal offices of the State, that "Every man has his opportunity, if he will but wait for it, and be ready." While the acquirement of knowledge tends to elevate its happy possessor, there are but few of the ills of life that are not ameliorated by it. Educate yourself, therefore, by all means and at all times, so as to be ready, at a moment's notice, to take the tide at the flood, remembering what Shakespeare has said—"There is a tide in the affairs of man, which if taken at the flood, leads on to fortune."

In the present age, when competitive examinations are the tests of ability, it will not do to be lax and indifferent

as to the acquirement of knowledge. Idlers may contemn learning, and those born to exalted positions may think, although falsely, that they can and do inherit education as their estates—that it is hereditary. The day too has gone by that a mere pretence to the possession of abilities will suffice to place a man in a situation of responsibility and trust. The public require something more than self-sufficiency and a superficial acquaintance with things from those who hold offices of eminence. To obtain these, examinations as to fitness are now instituted, and by common consent and approval they are now acted upon. Hence, to "pass," and to possess the required documentary proof, careful and continued study must be resolved upon.

Then to all this is to be added the information derived from the instruction of the preceptor given in his daily rounds among the patients. Nor from this will he who has the instruction of youth, and rightly performs his duty, ever shrink. It is this, in fact, which renders his position one of so much responsibility and anxiety, and therefore he will be always solicitous to point out to the pupil the peculiarities and the variations in the diseases under which the animals are labouring; which will be followed up by advice carefully and thoughtfully to read what different authors may have written on the subject, thus inculcating those habits of investigation that cannot fail in after life to be fraught with the greatest advantages to the student. Nor must the pupil be slow in performing his part. There is much that he can do in the way of preparation for his studies, and by which these, indeed, will become much lightened. Having had the foundation laid in sound advice, and seeing the consequences that result from the application of right principles, he will be anxious that time never lies idly on his hands, or be devoted to other than lawful purposes. It is true that *all* knowledge is good, since "the rays of philosophy and science converge to the focus of utility."

Your particular study being a division of medicine, some of the sciences bear more immediately upon it than do others, and these you will select. It was pertinently asked by Dr. Bence Jones, in his inaugural address at the

British Association for the Advancement of Science—What chance is there of any one understanding the action of the chemical, mechanical, and electrical forces in the body until a fundamental knowledge of chemistry, mechanics, and electricity has been first obtained? What chance has a medical man of regulating the forces in the body by giving or withholding motion, food, or medicine, with any reasonable prospect of success, when a preliminary education in these sciences is thought to be of no importance?

It should, however, be remembered that our acquaintance with the sciences generally renders us more fitted for the performance of the duties of the respective stations in which we may be placed by Providence. Yet this may be but a a limited view of their utility. There is something, after all, that results from a familiarity with the truths of science; they develope a man's faculties and render him a better citizen, and also better able to take his part in the common or everyday business of life. The question should not be—Will the acquirement of this or that division compensate me for my labour; but rather, will not my nobler part, my mind, be expanded by the possession of knowledge, or a search after truth, of which the sciences are but the laws?

In all probability, scientific investigations will demand more of your time than hitherto has been devoted to them, since they constitute the foundation on which you will hereafter have to build, and you must be contented to be unremitting in your application, so as to become acquainted with them, nor ever slacken in the pursuit. It has been truly said—

"We learn, in contemplating scientific discovery, that the search after truth demands a large amount of labour continuously applied. A fact may be known for ages, and remain a barren fact, because man fails to interpret it correctly. Of this, numerous proofs might be adduced. Every advance made by the human family is due to the devotion with which some chosen member of that family has solicited nature to disclose her powers. The earth, a mass of matter of wondrous construction, rolling along its prescribed path in space, is man's abiding place for time. From it he must glean everything necessary for his healthful existence; and from it he

must derive every source of finite happiness. Man's prescribed task is 'to possess the earth and subdue it'; and the more zealously he bends his mind to the labour, the greater is the sum of his own enjoyment, and the more numerous are the advantages which he is enabled to bestow upon his kindred. As the chaotic earth in its early darkness 'was without form and void,' and at the touch of light it became a symmetrical globe, clothed with organised forms and radiant with beauty, so brute matter is seen to develop hidden powers under the influence of the human mind, and become, at the same time, useful to man."

Coming to the close of our address, we would observe that seasons of occasional relaxation from your studies will be both desirable and necessary. The old saying of "All work and no play makes Jack a dull boy," is not only true, but may, perhaps, merge into a *bad* boy, for the mind is like the body, strengthened by alternations of labour or pursuits. "We accept it," says a writer, "as the necessity and privilege of our time, that men in every business and profession, and even in holding their position in society, must work hard—so hard that the machinery of mind and soul is exposed to wear out too soon, or suddenly give way under excessive strain. But this formula of work must be coupled with another to form the complement of discreet living, viz., that our work must have its counterpart of play. Our strain must be compensated by rest; our anxiety and ambition be balanced by ease and quiet. The theory of love of work, wise, continuous, and fruitful, is not complete without this."

With this we quite concur, only we would say—be careful that this relaxation is not allowed to degenerate into licentiousness, or even indifference, for then evil will be the sure result; and always remember the axiom, that "Time once lost can never be regained." Nor be discouraged, even should your first efforts fail of success, but go on, determined to excel; like the Alpine climber, boldly meet each opposing difficulty, and scale heights seemingly insurmountable in the distance, until you stand a conqueror, and breathe the air in which an eagle soars.

Still, we repeat, that to ensure all this you must be con-

tented to work, and the poet has told us that, whether mental or corporal—

"Work, after all,
Best circulates the blood; none eat and sleep
As workers do. Work is the sauce of life;
'Tis the prime pleasure, the true interest,
The chiefest duty after worshipping.
Pleasure abridges, but work lengthens, life;
It lends a colour to life's picture, gives
Fresh vigour to the limb, and healthfulness
To the whole man. 'Tis a well-spring of joy;
It is itself an inspiration;
It curbs ill passions, cherishes the good;
It exercises patience and self-trust,
And multiplies high capabilities;
'Tis the peace-keeper in the family,
The watchman in the city, the gold band,
The solder of society."

THE VETERINARY MUTUAL DEFENCE SOCIETY.

We elsewhere insert, and with considerable gratification, a report of the first annual meeting of the above society, and sincerely do we wish it all prosperity. Looking back upon a somewhat lengthened period in connection with the profession, we have witnessed several attempts made to advance its interests, but never have we seen so general a spirit of co-operation animating the body as at the present time. From this it is we augur the ultimate success of the above society, since we cannot forget that efforts of a similar kind have been again and again made and unfortunately failed; or ere this a useful society of this kind would have been permanently established, and in operation. This apathy has always been to us quite inexplicable, since, generally speaking, men are moved to action when their own interests are at stake; while it is by union alone that strength is secured, the many being able to assist the few.

We had intended to have made some further comments on this subject, for during the meeting there was much enunciated that is suggestive, and motives advanced in accordance with our feelings and views.

While reflecting on it, however, the subjoined letter came to hand; and we are contented to leave it and the report of the meeting to work their due influence on the profession, convinced that such earnest endeavours for good cannot fail of making their right impression.

We would, in conclusion, advert, giving to it our hearty approval, to a proposition that has reached us, made by Mr. Bodington, M.R.C.V.S., Cardiff, that a conference of the different veterinary medical associations be held in 1867. But here again it is only from united action that any solid and substantial good can ever be derived. When will this obtain, and each individual member of the profession so act as if on his efforts alone depended the benefit of the whole? Let us never forget our motto.

The £1000 *Bequest proffered to the Veterinary Mutual Defence Society.*

Messrs. Editors,—If the success of a cause is dependent upon the justice and meritoriousness of its claims, and these claims advocated by honest and earnest men, surely no cause could commend itself to our minds with a greater moral force than does the Veterinary Mutual Defence Society, and it becomes the duty of every lover of his profession to support it to the extent of his power.

It was my privilege to be present at the first annual meeting, which was held in Liverpool the other day, and I must say, if the deep-rooted convictions of that band of pioneers, their unanimity, and the thorough earnestness indicated in the numerous letters received from the most eminent and most respected veterinary surgeons in all parts of England, are any auguries of success, then I say never did any society bid fairer, not only to become a success, but an honour to our profession, and I earnestly hope it will be well supported.

But the deep interest and enthusiasm of the meeting had not attained to its climax until our worthy president announced that if the general body of the profession, and the various veterinary medical associations would support the movement as they ought, that the executors to his will should find therein a bequest of £1000 to this society. Oh! how I wish that every member of the veterinary profession in England, Ireland, and Scotland, could have been present and witnessed the scene at that moment, when every member

rose as one man; and could the echo of those cheers only reverberate into the hearts of the absent ones, I am persuaded every man would feel it to be not only his bounden duty, but a privilege to become a partner in the concern.

WILLIAM WHITTLE, M.R.C.V.S., Worsley.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Lessons in Elementary Chemistry. By HENRY ROSCOE, B.A., F.R.S., Professor of Chemistry in Owen's College, Manchester. London: Macmillan and Co.

FOR years past energetic attempts have been made by a few chemists to reject the old mechanical modes of viewing the structure of chemical bodies, and to replace them by systems founded on rational and logical bases, such as are demanded by existing science. But, like all innovations, such attempts met with great and prolonged opposition; and it is only very recently that the superiority and harmony of the new views have been at all generally acknowledged. The causes of opposition are various. Some rejected the new systems because they had learned their chemistry by the old, and the trouble involved in acquiring facility in employing the new methods was sufficiently great to prevent such persons making the change. Others rejected the modern systems *because* they were *new*—a fault sufficient in itself to cause them to be shelved by those who would not, or could not, weigh the relative merits of the old plans against the new. The result has been that chemists have been divided among themselves, not on questions of fact, but on matters of doctrine. This has led to much confusion; and teachers have been greatly perplexed to know what system to adopt in the instruction of their pupils. These observations apply with especial force to chemical teachers in medical schools, many of whom were advocates of the new systems, but taught by the old. This apparent paradox is easily explained when it is remembered that, in works on physiology, pharmacy, and materia medica, the old methods of notation are still employed; and so, to prevent confusion, many chemical

teachers taught medical students principles which accorded with those met with in the works above alluded to. Another, and a better reason why advocates of the new systems continued to teach by the old is, that there existed no text-book suited to the requirements of students; so that pupils were debarred the indispensable opportunity of readily confirming, by reading, the knowledge they had acquired in the lecture-room.

To supply the deficiency in modern chemical literature here adverted to, a few attempts have been recently made; but, in our opinion, no one has been so successful as the author of 'Lessons in Elementary Chemistry,'—namely Dr. Roscoe. Teachers who approve the modern chemical doctrines have now but very few excuses for not adopting them in their lectures; and we believe, in fact we know, that during the forthcoming session the old teachings will give place to the new in nearly every medical school in the United Kingdom.

Dr. Roscoe's book is a small manual of 398 pages, 145 of which are devoted to concise and clear descriptions of the fundamental principles of chemistry and the non-metallic elements, 91 to the metals, and 124 to organic chemistry. There are also 25 pages of well-selected "Questions and Exercises," every one of which should be carefully worked out by students using this book. The work is illustrated by woodcuts, and by a beautifully executed chromo-lithographic frontispiece, showing the spectra of the metals of the alkalies and alkaline earths. We regard Dr. Roscoe's 'Lessons' as being by far the best book from which a student can obtain a sound and accurate knowledge of the facts and principles of rudimentary chemistry; and we have, therefore, much pleasure in recommending it to the notice of those who are about to commence their chemical studies, as well as to those already possessing some knowledge of the science, but who are desirous of becoming acquainted with the chemical teachings of the present day.

Notes for Students in Chemistry; being a Syllabus of Chemistry and Practical Chemistry. By J. Albert Bernays, Professor of Chemistry at St. Thomas's Hospital. Fourth Edition. London: John Churchill & Sons.

On less than a hundred pages Dr. Bernays has succeeded in recording the leading facts and theories, not only of

chemistry, but also those of the kindred sciences, heat, electricity, magnetism, &c.

This condensation has been well accomplished, as will be seen by the following extract from page 15:—"Iodine, I = 127 (I } I). Discovered by Courtois in 1811. Never native. In sea-water as Na I; in sea-weeds, sponges, &c. A bluish-black lustrous solid of sp. gr. 4·947; melts at 225°; boils at 347°. Crystallizes in octohedra with rhombic bases. Its vapour violet (ἰώδης). Stains the skin yellow. Little soluble in water, it is very soluble in alcohol (tincture of iodine) and ether. Strikes a blue colour with starch. A valuable medicine."

The Notes of Dr. Bernays will be found exceedingly useful in the hands of students. They will not replace the ordinary text-books on chemistry, but they may be used with great advantage in conjunction with them. Many students lose much that a professor says during lecture, from their occupying themselves with writing notes. If provided with the printed notes of Dr. Bernays they will avoid this loss, and will, moreover, save a great deal of time and labour. The chief imperfection noticed is, that although the old and new notations and formulæ are given, the plan has not been carried out so systematically and completely as is desirable. It is also to be regretted that more uniformity was not observed with reference to the naming of chemical bodies. These defects are, doubtless, oversights on the part of the author, they do not materially interfere with the very useful character of the book, and will, we doubt not, be remedied in a future edition.

Vivisection: is it Necessary or Justifiable? Being two Prize Essays published by the Royal Society for the Prevention of Cruelty to Animals. London: R. Hardwicke, 192, Piccadilly, 1866.

We have already expressed our opinion respecting vivisection, and stated our conviction to be that very rarely is it called for, and that the benefits supposed to result from it, as a general rule, are at best dubious. Heartily have we also condemned the cruelty too often practised in its performance; and again and again lauded the efforts made by the Society for the Prevention of Cruelty to Animals to enforce their praiseworthy intentions.

We feel assured that we carry with us in these remarks the right feelings of our profession, as a body, since paramount in their duties is the manifesting of kindness and humanity to the brute creation.

It was with no intention to denounce physiologists or their practices without discrimination that the society offered a prize of £50 last year for an essay in English, and a premium of 1000 francs for an essay in French, on the following propositions :—

I. Is vivisection necessary or justifiable (when performed as at certain Veterinary Schools) for the purpose of giving dexterity to the operator?

II. Is it necessary or justifiable for the general purposes of science; and if so, under what limitations?

But—using mainly their own words—to provide an opportunity for an impartial consideration of the difficult question of vivisection, or the practice of cutting live animals for scientific purposes; while physiologists of all nations were earnestly entreated to discuss these matters, and either vindicate the operations as necessary and justifiable, or deprecate them as unnecessary for mankind and unjust to the victims.

Thirty-two essayists responded, and the utmost care was taken in the appointment of judges, so that all fairness and impartiality should be exercised; whilst, at the same time, the labour of examination was facilitated by each gentleman being furnished with a copy of the essays, printed in "galley-slips," for his careful and deliberate perusal. The result was that, at the adjudication, two essays were selected by them, and the first prize was awarded to G. Fleming, Esq., F.R.G.S., F.A.S.L., and veterinary surgeon to the Third King's Own Hussars. But as the second essay was only in a minority of one vote, a second prize was given to Dr. Markham.

It is with no ordinary feeling of gratification that we place on record the above, and especially that Mr. Fleming, whose name is not unknown to our readers, is placed thus high by the exercise of his literary abilities; and still more that they should have been so nobly employed by him. By so doing he evinces he has both a head and a heart.

The Secretary to the Society observes that, although not bound by the opinions of the essayists,—

"It is hoped that the views expressed by Mr. Fleming, and by Dr. Markham, both distinguished members of learned professions, will tend to promote the objects of the society; for the true inference from each Essay is that there is much needless cruelty performed by phy-

siologists, and that restrictions should be placed upon operators by College or by Legislative enactments; and although Dr. Markham is not prepared absolutely to prohibit experiments upon animals, his recommendations, if carried out, would suppress probably not less than ninety per cent. of those atrocities which it has been the earnest desire of this Society to prevent.

"One great advantage that will undoubtedly arise out of this discussion will be the more frequent employment of an anæsthetic in operations upon animals; and if this were the only result, the Society would not have laboured in vain, nor spent its strength for nought."

We have read the essay of Mr. Fleming with unmingled feelings of high satisfaction, and give to it our warmest approval. The sentiments enunciated by him are creditable to him as a humane man, and show that he is not ashamed to declare his benevolent feelings, nor to exert himself in defence of the lower animals, by standing up against the infliction of any kind of torture on them, or even giving them unnecessary pain. He says, at the beginning of his essay:—

"Vivisection, the term employed in learned speech to designate the unhappy fashion of cutting up or dissecting animals, is one of the foulest blots existing upon our relations with the highest, the most affectionate, and the most useful of the entire creation confided to man. Defying the law in this and other countries, it may be pursued to an indefinite length by the veriest tyro of science, without incurring more than the disapprobation or remonstrances of the kind-hearted. Truly the mutilation of sentient beings for the purposes of experiment or demonstration deserves more than the reprobation of the humane, and much requires the surveillance of the law. It sadly mars the dignity and the poetry of science, whose base, founded upon truth, relies for its beauty and its attractiveness on the gentler sympathies it calls forth, while teaching us 'to look through nature up to nature's God,' but not with the eyes or hearts of votaries who torture and massacre the helpless."

Again, he says:—

"There are those who, under the ægis of Science, in this and other countries, but especially in France, commit enormities too horrible for recital, and inflict the most cruel punishments on creatures which deserve our best care, compassion, and gratitude for the many services they so willingly confer upon us. The peer or the peasant, if found guilty of exercising their savage and cowardly propensities, obtain a due and well-merited chastisement; but the man of science has ever a number of pleas to urge on justice and humanity, no matter howsoever extravagantly he may indulge his whims at the expense of his suffering victims; and thus he escapes that punishment which is awarded to others. It is only the scientific man, in fact, who is licensed to inflict pain on animals, and whether this is necessarily or justifiably done we shall carefully examine.

"As the boundaries of science become enlarged, the requirements of its votaries increase. That which was at first viewed as a simple subject has become broken up into many intricate ones, all requiring particular methods of treatment and research. And thus it is that

the science of life has, in its development, become resolved into—or rather demands the continual acquirement of—other sciences. So to-day the physiology of living beings seeks many aids from other departments of science, in order to assist the philosopher in the interpretation of its truths, and to guide him in beneficially applying the knowledge so acquired to the cure of disease and the prolongation of life. To gain a more extensive and speedy, as well as a more exact, idea of those functions and manifestations peculiar to living creatures, it has been deemed by many men essential and justifiable to resort to experimentation during life on those animals which, in some particular, approach nearest to man in organisation; and this mode of research has so increased of late years, and has been conducted with so much apparent disregard of suffering, as to raise a question as to how far it may be necessary or excusable. But it is not alone the physiologist who requires to be put upon his trial for the many cruel tortures he has invented and inflicted. The zealous and enthusiastic promoters of the healing art, whose functions are chiefly those most intimately concerned with the alleviation of pain, whether as applied to man or to the lower animals, instead of coming before us as the representatives of almost everything noble and kind in the universe, can be indicted on charges of gross cruelty, the details of which contrast painfully with their avowed mission of humanity and mercy."

He further adds:—

"In a moral sense, I submit, vivisection is unjustifiable, for the practice of humanity is as clearly, if it is not more closely, allied to the veterinary as it is to the sister profession. The humane and benevolent intentions which should actuate its members, and which ought to guide them worthily in the alleviation of pain or sickness in their dumb patients, must ever hold a high place in those considerations usually designated as utilitarian. Young men who are inured to the sight of bootless suffering, and hold life and sensation in but little regard, can scarcely be expected to have that moral check to the wanton infliction of pain in after life which those possess who have been taught to respect the feelings of innocent creatures, and who, by precept and example, are shown that it should be their constant study, as it is a moral obligation imposed ou us by the Creator—

> "'Ne'er to blend our pleasure or our pride
> With sorrow to the meanest thing that feels.'"

We could go on culling these noble sentiments, and should like to do so, but think it more desirable that every member of the profession who possesses kindred feelings with Mr. Fleming should read the essay for himself. He will not fail to rise from its perusal "a wiser and a better man," although he may meet with much that will harrow up his very soul in the atrocities committed under the name of "necessary operations," so as to "give expertness to the operator,"—an expedient which we are happy to know is never resorted to or thought necessary at our Alma Mater, and the inutility of which has been clearly demonstrated.

We may be permitted, in closing this review—and we have not followed Mr. Fleming throughout in his consideration of both the propositions; we also reserve some quotations to be recorded hereafter—to add the following extract:—

"Who is he who has thrown down and bound an unfortunate animal, to be operated on for the relief of some malady, and has not felt deeply for it, when, unconscious of the good intention of the act, it has struggled, moaned, and screamed in pain and terror, as the knife severed textures endowed with exquisite sensibility, or the burning iron traced lines of fire through the delicate skin? Has not this commiseration been the chief motive which guided and gave nimbleness to his hand, keenness to his eye, and steadiness to every movement; quickening his anxiety to do no more than was really needful, and in as brief a space of time as possible? Why, then, attempt to destroy in the bosom of the student one of the strongest incentives of his professional career? Is it necessary that his gentler disposition be blunted, and an inhuman disregard of feeling prevail, before he can become a clever operator? Assuredly not. And can it be proved that the dissection of living animals gives the veterinary surgeon any superiority over the operator who eschews the practice? It can, however, be demonstrated that those practitioners who have graduated at the schools where this fashion is in full force, and who have hacked, torn, bled, and seared through the specified number of preliminary operations, are not a whit more expert in their practice, are not endowed with more tact in going about their patients, or are not more worthy members of their profession than the veterinary surgeons who are not taught by the aid of such cruel and unnecessary performances."

Again do we recommend our readers to peruse these essays for themselves; and we hope and believe that we have extracted enough to induce them to do so.

Extracts from British and Foreign Journals.

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

(*Continued from* p. 733.)

An adult man takes from 30 to 60 ounces of solid food daily, or in the course of the year about seven times the weight of his body, and yet that remains of the same weight at the end of the year as it was at the beginning. We know that part of this food is burned away in the support of respiration, but we have not yet considered in detail what becomes of the nitrogenous portions of the food. The body

of a man consists of certain chemical ingredients, the weight of which is known to us. Quetelet found, by a large series of observations, that the mean weight of an adult man of thirty years of age is a little above 140 lbs., or exactly 2245 ounces; if such a man were put into a mortar and mashed up, so that all his organs were destroyed and his bones mixed up in the mass, the chemical constituents of the pounded-up man would be as follows, in ounces and tenths of an ounce. (And here we may remind the reader who is not accustomed to work with decimals that the figure after the point always means tenths of an ounce in this paper; and when a *second* figure occurs after the point, it refers to so many hundredths of an ounce.)

Albuminoids or "flesh-formers" . .	342·9 oz.
Derivatives from albuminoids, like gelatin .	109·4 „
Fat	55·2 „
Colouring and extractive matter . .	12·5 „
Mineral substances	205·9 „
Water	1519·1 „
	2245·0

We may run the first two lines together, and say that a man thirty years of age contains in his body 452 ounces of substances having a like composition to the flesh-formers in his food. There is an old tradition that the body of a man changes completely in seven years. The fact is that it changes, if not completely, at least nearly so, in about 113 days. In other words, the body wastes at such a rate that all its nitrogenous substances would disappear in 113 days if the waste were not supplied by flesh-formers in the food. The bones obviously take a longer time to change, and if we may hazard a guess by the quantity of phosphates excreted, they may not change completely for fifteen years. The blood is continually carrying to each organ of the body nutritive substances to repair it, but it is also simultaneously carrying away matters which have served their purpose and which are to be removed from the system. The new materials are built exactly into the place and form of those which are removed, so that the configuration of each organ or tissue remains apparently unaltered, although in fact continually changing. In every organ of an individual, life, in the form of local births, and death, by the destruction of parts, rapidly and incessantly alternate. A portion of matter is endowed with its allotted period of life, and is moulded into a living tissue, while a like portion of matter dies and is absorbed and secreted as its predecessors were before. The probability is, that force is never manifested in any organ of the body with-

out a partial destruction of it. A finger cannot be raised without a portion of its muscles being wasted in the effort, absorbed into the blood, and subsequently excreted from the system. The oxygen dissolved in the blood which circulates through the muscle is the immediate cause of the destruction. Blood circulating through a muscle at rest contains about $7\frac{1}{2}$ per cent. of oxygen, but when the muscle is in a state of contraction it is reduced to $1\frac{1}{3}$ per cent.; so that it obviously passes over and necessarily destroys the tissue which is exhibiting activity. Violent muscular effort soon shows this result by exhaustion. Rest now becomes necessary to enable the blood to restore the wasted part and build in living tissue in the place of that which has been removed. There is no reason why we should be afraid to admit that every thought and sensation produces a similar waste of nerve and brain tissue, just as mechanical labour does of muscular tissue. It is impossible to conceive mind manifesting itself to the world through inert and unchanging matter, when we know that animation and the power of change are essential to every living act. As our intellectual work is done through the agency of material organs, these must be altered in the performance of the commands of volition.

(*To be continued.*)

915.

THE CATTLE PLAGUE.

By Howard Reed.

(*Continued from* p. 679.)

The Medical Committee of the Norfolk Cattle Plague Association note the symptoms of the cattle plague under three heads—early, confirmed, advanced. The first and third agree with the above. The second mentions the circulation ranging from 80 to 100, the respiration from 35 to 70, "and an irruption of spots, papules, or vesicles on the skin." They observe that the disease endures from four to six days after it is "confirmed," and that the period of incubation, when the disease is the result of *infection*, varies from seven to twenty-one days, and of *inoculation* from four to eight days.

To these evidences have been added others. For that which is discovered by thermometric observation we are indebted to the valuable experiments conduced by Professor Gamgee and his brother, Dr. Arthur Gamgee. On passing a delicate thermometer into the rectum, it was found that where incubation had commenced an elevation of temperature

will indicate its presence some time before the eye can detect any of those symptoms generally looked for. The normal temperature was found to vary from 100° to 101° Fahr., and sometimes to rise as high as 102°. Putting the test into practice, they were enabled to predict with fatal precision, the occurrence of impending attack at a time when the owner of the cattle deemed himself secure. Where the temperature was raised to 105°, 106°, and 107°, they were certain, as experience proved, of the result. The value of this symptom will be appreciated by all who believe that it is only in the first stage of incubation that this disease can be successfully combated. As the pulse increases, the temperature decreases; and before death a sudden drop takes place, often from 106° to below 100°.

Dr. Gant and others pointed very early to the advantages to be expected from careful systematic examinations with the microscope, and by chemical analysis of the blood, the breath, and excreta of diseased animals during the various stages of the malady. Such observations have been pursued by Drs. Beale and Marcet, at the instance of the Royal Commission. Although their Report is not yet published, we are not without information on these points which can scarcely fail to throw light upon the subject under consideration.

Dr. Arthur Gamgee has pursued a series of experiments, which are quoted by Dr. Smart, and his brother in the *Veterinarian*. An abstract of the results will serve our present purpose. These, as they relate to the *blood*, are as follow:—1. The water of the blood is diminished. 2. The solids of serum diminished. 3. Blood-corpuscles increased. 4. Fibrine increased. 5. Proper salts (so far as yet determined) diminished. Examples:

The blood of a healthy calf contained 4·53 parts of fibrine in 1000 parts, and 89·69 parts of corpuscles in 1000 parts.

The blood of the same animal after the induction of the disease by inoculation.—The fibrine rose to 4·85 parts per 1000, and the blood-corpuscles to 117·7 per 1000. The induced disease in this case was *slight*. The fibrine in a bad case, just before the animal's death, amounted to 9·9 per 1000 parts.

	1. September 17.	2. September 26.	3. November 4.
	Calf in perfect health. Immediately after being bled was inoculated with tears of sick cow.	Calf very ill. Pulse 60°, temp. 108°. Does not eat. Great discharge from nose and eyes. Redness of vulva. Diarrhœa.	Calf now in perfect health again. Recovery has been very slow and tedious.
Density of defibrinated blood	1050·1	1048·9	1044·6
Water in 1000 parts of blood	835·48	820·68	847·754
Corpuscles . . .	89·69	117·70	74·186
Fibrin . . .	4·53	4·85	4·83
Solid matters of serum .	70·30	56·77	73·23
Water in 1000 parts of serum	922·39	930·82	921·41
Solids . . .	77·61	69·18	78·59

The above table shows the results of three separate analyses of the blood of the same calf—healthy, diseased, and restored. The other analyses exhibit precisely the same changes, though varying in such degree as we are led to expect from the tabulated labours of Andral, Gavarret, and Delafond, who have examined with great care the changes that occur in the blood of domestic animals during the presence of disease.*

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

A FEW WORDS ON THE NAME OF RINDERPEST, AND THE SPONTANEOUS ORIGIN OF THIS EPIZOOTIC IN THE RUSSIAN STEPPE CATTLE OF THE GRAY BREED.

This is the title of a pamphlet by Professor Unterberger, Director of the Veterinary School of Dorpat.

The author says that epizootics amongst domestic animals is a calamity which undermines the wealth both of the agriculturist and the cattle-breeder, who, with the loss of their live stock, lose their all; consequently, it takes many years before those districts where the rinderpest has prevailed to

* Subjoined is the result of the analysis of the blood of fourteen healthy neat cattle.

	Fibrin.	Blood-corpuscles.	Solids of Serum.	Water.
Mean . . .	3·7	99·7	86·3	810·3
Maximum . .	4·4	117·1	93·6	824·9
Minimum . .	3·0	85·1	82·9	799·0

recover themselves. This is more particularly the case in Russia, which is a great agricultural and cattle-breeding country, and, by its varied climate and soil, but more particularly its wide extent of frontier on that part which is considered as the cradle of this most dangerous of all epizootics; hence it is more frequently visited by it than any other country. The losses sustained by Russia from epizootics are enormous. It appears from official sources that from the rinderpest alone they are estimated at ten millions of roubles,—an enormous sum; but in Russia no one seems to care; they are accustomed to this yearly sacrifice, and are persuaded that they have no means of escape from it. What has greatly contributed to this is the deep-rooted idea that those measures adopted by other countries for the prevention of epizootics, and principally against the rinderpest, could not be made available for Russia. In those countries, the rinderpest is an imported malady, which is not the case in Russia, this being the home of it; and further, the Steppe cattle carry the germs of the malady with them wherever they go, while the outbreak is spontaneous in the gray Steppe race, or breed.

The importance of this subject will be, says our author, my excuse for submitting it to a critical examination, so as to determine, if possible, where the rinderpest really does originate. The majority of foreign authors will at once answer, in Russia; others, more prudent, will say, we receive it from Russia.

In Russia there are two different views respecting this subject. A former Professor of the Academy of Medicine at St. Petersburg, P. Lukin, says, in his work on epizootics, published in 1830, in the Russian language:—"The people here believe that the rinderpest is brought from the South, by the great number of horn-cattle imported; and they are of opinion that in those parts the rinderpest is indigenous." But this author maintains that the rinderpest may originate in any part of Russia, when horned cattle are exposed to certain predisposing hygienic conditions. About a hundred years ago, the number of those who were of this opinion was very great. Hardly a year passes, says the celebrated Adami, in 1781, when this malady (the rinderpest) does not prevail in some part or other of the Austrian empire, and frequently in several parts at the same time, to either the partial or total ruin of the landowner and farmer. He then inveighs against the superstitious credibility of the countrypeople, who resort to empirical remedies for the cure of it, instead of improving the condition of their cattle by giving them

cleaner sheds and better food and water, and also paying more attention to their stock generally. He considers that the cause of the malady is in the constitution of the atmosphere, the position and condition of the meadows, &c. Meanwhile, let us not hastily condemn Adami. The malady in question had in his time prevailed in every part of Austria for thirty-three years without interruption. In the year 1769 alone, 38,000 head of cattle fell a sacrifice to it. But even in our time, more recent than that in which Adami wrote, this view of the origin of the rinderpest has found many advocates amongst the medical profession. The protomedicus, Ratherny, of Prague, in 1844, did not consider the rinderpest as a malady introduced and propagated by contagion, but as an indigenous one, produced by local influences of a noxious character, similar to the dysenteric typhus in the human subject; in other words, a contagious epidemic. In consequence of this view, no stringent preventive measures were taken, and the rinderpest spread over the whole of Bohemia, and threatened to penetrate into the neighbouring states; and it was only when some veterinary professors from the Vienna Institute recognised the malady as the rinderpest that the proper measures were adopted to check its further progress.

At the present time there is hardly a veterinary surgeon who, having had an opportunity of studying the rinderpest, would consider it of spontaneous origin in any of the Western States of Europe. But also in Russia the number of the advocates of the theory of Lubin has considerably decreased. The great majority of the Russian veterinary surgeons, as well as all enlightened agriculturists, are of opinion that the Steppes of Russia, particularly the southern, are the home of the rinderpest. I will not deny that before I visited Southern Russia I held the same opinion. I likewise believed formerly Hungary to be the birthplace of the rinderpest; but after a sojourn of sixteen months in those parts I learned better.

The question finally is, where does the rinderpest originate? In Hungary, I was told that it came from Bessarabia. During my sojourn of two years in Bessarabia, viz., 1854–5, I took every opportunity to obtain information as to whether the rinderpest was an imported or a spontaneous malady in that country. Everywhere, and particularly amongst German colonists, where I made the inquiry, the answer constantly was, that it was an imported malady. In Chersan, I was told, not only by the German colonists, but also by the Bulgarians and the Greeks, that whenever the rinderpest broke out amongst their herds, it was generally known to

have prevailed in the neighbouring country, and, as a rule, it proceeded from the direction of Jekatrinoslow, but sometimes, also, from Podolia. In Podolia, however, as a worthy professor, Adanigwitz, of the former Veterinary School of Wilna, assures us, the malady is there by no means of spontaneous origin. Even so little is that the case, from the best informations obtained in the western government of Russia, as well as in Poland; who can, after this, pretend that the malady might have a spontaneous development either in the eastern or the western governments of the empire? In one of the eastern governments, Simbirsk, I practised thirteen years as epizootic veterinary surgeon. There the rinderpest is never spontaneous; and, as a rule, it is imported from Orenburg, but sometimes, also, from Kasan; seldom from those governments situated to the south of Simbirsk.

(*To be continued.*)

YORKSHIRE VETERINARY MEDICAL SOCIETY.

The thirteenth meeting of this society was held at Gascoigne's Hotel, Harrogate, July 31st, 1866.

The President, Mr. M'Taggart, M.R.C.V.S., in the Chair.

There was an average attendance of members, but there was one feature that gave rise to a feeling of regret to all present, viz., the absence of all the veterinary surgeons in the neighbourhood, with the exception of Messrs. C. Secker, Knaresborough, and Mr. Taylor, Wetherby. It is to be hoped that the very boisterous weather during the day was the cause of their absence.

After the preliminary business was concluded, Mr. Broughton, of Leeds, read a most valuable practical essay on the "Diseases of the Stomachs of the Ox," which elicited a good discussion.

The next meeting of the society will be held at Bradford, in October next, when Mr. Carter will read a paper on the "Nature and Treatment of Fistulous Abscesses." The following important business will also be transacted:—1st. The election of office-bearers for 1867. 2nd. The discussion of Mr. Naylor's motion, "That it is the opinion of this society that it is advisable the subscription should be raised to £1 11*s.* 6*d.* annually, and that it shall be eligible to employ its funds for the protection of its members." 3rd. The discussion of Mr. Greaves' motion, "That this society resolves to co-operate with the Liverpool, Lancashire, West of England, and Midland Counties Veterinary Medical Associations, in forming and supporting the 'Mutual Defence Society.'"

It is to be hoped that the consideration of such important business will ensure a good attendance.

W. Williams,
Hon. Secretary.

VETERINARY MUTUAL DEFENCE SOCIETY.

The first annual meeting of this society was held at the Royal Hotel, Dale Street, Liverpool, on Thursday, 13th September.

The following members were present:—Mr. Thomas Greaves, of Manchester, M.R.C.V.S., Vice-President of the Society, in the Chair. Mr. John Ellis, Liverpool; Mr. G. Heyes, Liverpool; Mr. James Brydon, Liverpool; Mr. Geo. Morgan, Liverpool; Mr. Thos. Harwood, Liverpool; Mr. J. T. Little, Liverpool; Mr. J. Leathen, Liverpool; Mr. W. A. Wilson, Liverpool; Mr. John Simpson, Liverpool; Mr. Charles Secker, Knaresborough; Mr. P. Taylor, Manchester; Mr. W. Whittle, Worsley; Mr. J. Moore, London; Mr. J. Howell, Rochdale; Mr. W. Wood, Wigan; Mr. J. Storrar, Chester; and Mr. W. Dobie, Birkenhead.

A number of letters received from professors of colleges and veterinary surgeons, both in the army and otherwise, expressing regret at their inability to be present, but warmly advocating the society, were read.

During the meeting a telegram was received from the President of the Royal College of Veterinary Surgeons, regretting his inability to be present, owing to the death of a near relative, but stating that "in spirit he was with the meeting to the fullest extent."

The Chairman, in opening the proceedings, spoke as follows:

Gentlemen,—There is no man in this room who is more sincerely sorry than I am at the absence of our worthy president on this important occasion; more especially is it to be lamented when we bear in mind that it is severe indisposition that compels him to tender his resignation; it is very unfortunate again, because at this our first annual meeting we should have had the right man in the right place. The nature and objects of this society differ materially from the nature and objects of our medical associations. At those meetings we are called upon to express our views on the science of our profession, and to convey to each other useful information in reference to the treatment of various diseases; but this society enlists the higher attributes of our nature, it appeals to our sympathies, to our moral faculties; it indicates a spirit above those base, grovelling, selfish motives which are warped and withered by avarice. Its objects are to teach us to feel for our professional brother, his widow, and his orphans; to teach us to respect and take an interest in one another; in short, to "do unto others as we would they should do unto us." I believe this society is the natural result that emanates out of the higher character which our profession is now attaining to. It is a proof that there is a generous, a noble spirit being born in our midst. Its formation is a sign, a monument of higher civilisation, an evidence of a sense of right pervading us as a body, a voice which speaks of a duty to be performed, an idea grander than the greatest personal interests, while it opens up a field of usefulness, and adds the highest dignity to

our efforts as a profession. I commend it to you. Let us foster it, it may become a blessing to many, not only in our own generation, but to our children's children. Let us make a strong and influential society—a professional institution—although we ourselves may never require its aid; but of this none of us can tell, as we know not what a day may bring forth. The most eminent practitioners in the land have had their reputations and their property placed in jeopardy by grossly unjust actions at law having been brought against them, and such may be yours or my case before we are much older; therefore do not let us be actuated by that narrow, selfish, despicable spirit, that tends to button up our pockets, and poisons all the springs of our better nature; do not let us listen to that sordid whispering which says:—"Oh, we have never been in trouble ourselves, and if such a thing did occur we have a balance at our bankers, and we could defend ourselves without asking any one to come to our assistance; if anybody else gets into trouble what is that to us? We can stand by and see them fleeced and go to the wall—we can look on wholly unconcerned and see them undeservedly hurled into ruin." I envy not such a man his feelings; let him live unhonoured and die unregretted. No, my friends and professional brethren, let us rather be inspired by the generous spirit which impels us to haste to the rescue. The evils that this society contemplates mitigating are not imaginary, they are not the evils of a past century, and may exist next century. They are the realities of daily life now. I will give you two examples of them. The first case that I will call your attention to was related by the late Mr. M'Kenna, of Belfast, at the North of England Association, two years ago. I wish to relate it here, because it is a truthful illustration of the power and the necessity of professional men holding together. You must bear this in mind, that Mr. M'Kenna was one of the most respected and experienced veterinary surgeons in all Ireland; he occupied the highest professional position; his practice was second to none in Ireland. One of his clients, a nobleman, chose to make a claim upon him for an assumed loss he had sustained from the death of a colt after castration whilst under his (Mr. M'Kenna's) care. There was a glaring injustice in the claim, and Mr. M'Kenna considered it to be his duty to defend the action. On the eve of the trial he felt the great uncertainty of the result of his cause; he foresaw that the noble plaintiff would be an influence upon the minds of the jury, who would, perhaps, be simple, ignorant, unsophisticated men, and in all probability they would decide against him, right or wrong. What was he to do? He had perfect confidence in the justice of his case; but often might is stronger than right, so he decided to set off at once from Belfast to London for Professor Spooner, but unfortunately Professor Spooner was from home, and would not be back in time; so he set off from London to Edinburgh for Professor Gamgee; here he met with that gentleman, who listened with intense interest as he related his case, and felt the importance of at once rendering all assistance in his power: he laid aside every excuse, and set sail that very night for Belfast. The professor said the reputation of my friend is at

stake, the reputation of my profession is at stake, I must haste to the rescue. He sailed all that night, and the next morning as it became bruited about in Belfast that Professor Gamgee, from Edinburgh, had come over to give evidence in favour of Mr. M'Kenna, the haughty noble plaintiff was taken aback, and at once withdrew the case from the court. Now here is an instance of the force and power of united action. Had Mr. M'Kenna been a poor man, without position or friend, he must have been trampled under foot, and perhaps his reputation and property would have been swamped for ever. Now the object of this society is to stand by your friend, as Professor Gamgee did for Mr. M'Kenna. The above case arose wholly independent of shoeing or a shoeing forge. I will now relate the second case. It is an example of the dangers we run in connection with shoeing. It is as follows:—A valuable cart mare was sent to be shod; she had been shod at this forge a time or two, but being a bad brute to shoe, the smiths were in great danger of having their limbs broken, or even getting killed by her. The proprietor of the forge informed the owner of the mare of this state of things, and he consented to her being shod in the stocks. She was therefore shod in the stocks a time or two. On one occasion she was more violent than usual; the proprietor of the forge was present all the time; none but thoroughly competent men were employed; they were all sober, and the usual or ordinary care was taken; no abuse or violence was used; but it so happened that during one of her very violent struggles she ruptured herself and the bowels protruded. The mare had in consequence to be destroyed on the spot. The owner of the mare held the proprietor of the forge responsible for her value—£60. Now this is one of the sort of cases which this society would hold itself in readiness to defend. This case occurred in the practice of one of the most respected and most experienced veterinary surgeons in Liverpool. Do you tell me these are isolated cases, and of exceeding rare occurrence? If they are, so much the better; but I am inclined to think it is no such thing. I could give you numerous examples of the kind, and some of them glaring and painful instances of injustice. In fact, I am inclined to the opinion entertained by our most worthy pioneer, the late respected Mr. Friend, that there never was an action-at-law brought against a veterinary surgeon for malpractice or depreciation in value, wherein an injustice to the veterinary surgeon did not exist.

The Secretary then read the first Annual Report, from which it appeared that there were at the present time forty members on the roll, and that the whole working expenses of the society had been confined to postages and printing.

On being put from the Chair, it was unanimously received and adopted.

Mr. Brydon then moved the following alteration of Rule 1, of which the Chairman had given notice:

"That there shall be three class of members—

"1st. Veterinary surgeons having forges, livery stables, or repositories.

"2nd. Veterinary surgeons having neither forges, livery stables, nor repositories.

"3rd. Army veterinary surgeons, or retired veterinary surgeons.

"Those under the first class to pay 21*s.* entrance fee, and 21*s.* annual subscription. Second class 21*s.* entrance fee, and 10*s.* 6*d.* annual subscription. Third class to pay 21*s.*, and be constituted life members."

The motion having been seconded, considerable discussion followed, and several amendments were proposed. Some members deprecated strongly any alteration of the Rule, but ultimately the alteration was passed with this addition, "That professors of any recognised college were included under Class 3, with this *proviso*, that members of this Class (3) should not have any claim on the funds of this society for any action at law they might become involved in through alleged malpractice or accident; but further, that members of this Class may become entitled to all privileges by paying an annual subscription of 10*s.* 6*d.*, in all other respects to be entitled to the same benefits as other members."

The Secretary then proposed the alterations of Rules 5, 7, 8, and 13, of which he had given notice. The feeling of the meeting was, however, that they should remain as they are at present, with the exception of Rule 13, which it was unanimously resolved to expunge.

Mr. Howell then proposed, and *Mr. Taylor* seconded, the following proposition, which involves an alteration of Rules 2 and 14, "That the members assembled at the Annual Meeting shall elect a president, vice-president, treasurer, and secretary; and they shall also choose a council of twelve to assist the said officers in the business of the society for the ensuing year; seven to constitute a quorum."

This proposition was, after some discussion, adopted.

The following gentlemen were then elected officers for the ensuing year, the first and last being re-elections:—President, Thomas Greaves, Manchester; Vice-President, P. Taylor, Manchester; Treasurer, John Ellis, Liverpool; Hon. Secretary, George Morgan, Liverpool.

The meeting next appointed the following members as council for the ensuing year:

Professor Varnell, London.
Robert Lucas, Liverpool.
Thomas Proctor, Liverpool.
Gilbert Heyes, ,,
James Brydon, ,,
John Lawson, Sen., Manchester.
Thomas Taylor, ,,
James Howell, Rochdale.
Charles Secker, Knaresborough.
R. L. Hunt, Birmingham.
William Whittle, Worsley.
James Storrar, Chester.

The usual vote of thanks to the officers for their services during the past year having been passed with acclamation, and responded to by Mr. Secker, a vote of thanks was awarded the Chairman for his services on that occasion, and the meeting terminated.

The members then dined together, and were joined by several other gentlemen; Mr. Greaves in the chair, Mr. P. Taylor in the vice-chair.

Ample justice having been done to an excellent dinner, and the cloth withdrawn, the usual loyal and patriotic toasts were given by the Chairman and heartily responded to. Mr. Whittle, V.S. Lancashire Yeomanry, replied in a very happy manner for "Army, Navy, and Volunteers."

Mr. John Ellis then gave the "Royal College of Veterinary Surgeons;" in doing which, he said, the toast put into my hands to propose is one which in a meeting such as the present requires but few words to ensure it being drunk with applause. We are all, or nearly all, members of that body corporate, and feel, as we ought to do, one interest in the success of that institution. We also all look to that institution for the encouragement of every measure calculated to promote the interests of the profession; and he hoped it would continue to be, as it had hitherto been, the sheet anchor of the profession. No one regretted more than he did the absence of its worthy president, his friend Mr. Lawson, whose name he found on the programme to respond to this toast. Of him in his absence he would only say that, in the Council of the Royal College of Veterinary Surgeons he was the "right man in the right place." He begged to couple with the toast the name of Mr. Howell, a worthy and respected member of that body.

Mr. Howell, in replying said, it had ever been his study to raise the *status* of the profession as much as in him lay, by keeping it out of the hands of ignorant pretenders and quacks, and doing all that he could in teaching the youths who had been placed under his care to walk in better footsteps than those in existence during his younger days. He expressed his high approval of the veterinary associations that were now spreading and taking root in the land; and which, he considered, did a great deal of good by bringing the members of the profession more in contact with each other, and creating amongst them a better and more friendly feeling.

The Vice-Chairman, in an eloquent speech, proposed "The Veterinary Colleges," observing that the veterinary surgeons had been, as a profession, in existence for seventy-five or seventy-six years, and during that time he could safely say that their progress had been great indeed. There was no doubt that their colleges had done, in a measure, their duty. Not only was there room for the whole of them, but room also for a college in Ireland. By increasing their number there would be a greater spirit of zeal and a greater spirit of rivalry excited, which would produce a sound equilibrium. After lamenting the absence of the professors at this the first festival of this society, he expressed a strong belief that the time

would come when they would consider it an honour to give their presence on such an occasion.

Mr. Moore, of London, reponded to the toast.

Mr. G. Heyes gave "The Examiners."

Mr. Wilson, in responding, highly recommended the adoption of the systems practised in the French colleges.

The Chairman in proposing the toast of "The Veterinary Mutual Defence Society" observed that such a society could not have been inaugurated a few years ago, thus showing the progress which had been made by the profession in late years. After lamenting the apathy and supineness that existed in the profession, which he thought a disgrace to it, he pointed out the necessity for more unity and good feeling among the members, and said they might depend upon it the public would respect them for it. He said if the society were supported as it ought to be, he would leave £1000 to it (applause), but not unless he saw it was conducted in a proper manner.

The Vice-Chairman.—It shall be (renewed applause).

The Chairman.—In conclusion, he would call on their honorary secretary, who he was proud to say was again unanimously re-elected to the post he had so worthily occupied, to reply.

Mr. Morgan said,—If I were to say that I have been taken wholly unawares in being called on to respond to the toast just given by the chair, I should be stating that which is untrue; but at the same time, if I were to say that I was fully prepared for all the encomiums lavished on me by the chairman, I should also be laying the truth on one side. I have, no doubt, had a good deal to do with this society, and for some time past the success of this meeting has caused me a good deal of anxiety; and only those placed in a similar position know the value to be attached to the receipt of a letter either approving of your proceedings or otherwise, for both are welcome. But when your efforts and invitations are treated with neglect, and might as well have been addressed to an inanimate lump of clay, the thermometer of hope sinks below zero. On the present occasion I have been honoured by many cheering communications, some of which have been read to you to-day, and I feel confident that unforeseen obstacles alone have prevented many of our professional brethren being present with us this evening. I consider the formation of this society to be a step in the right direction, and any efforts of mine in the advancement of so good a cause I only regard as a labour of love. I feel confident of its ultimate success. You have just listened to the noble offer of our president. May the day be long in dawning when we shall claim it! With such a leader I trust others will follow, and in the meantime I hope the society may be conducted in such a manner as to earn the respect and support of every member of the profession; and now that this our first anniversary is drawing to a close, we can at least congratulate each other on our having had a pleasant and unanimous meeting, if not a numerous one. In conclusion, allow me to urge on gentlemen present the fact of this earnestness and

enthusiasm, together with the numerous and cheering letters received on this occasion from some of the most eminent members of the profession, also the noble example of our president, who has laboured for the success of this society with unwearied zeal both by night and day, not to mention the many miles he has travelled and the money he has spent in advocating its cause, to remember that it is a cause of truth and right. I say let them think of all this, and then ask is there any fear of success? I answer emphatically —No; and as each member can do something if he loves his profession, and acts faithfully to his convictions, let him resolve that he will at least procure one member in the course of the year; let him strive to attend all meetings of this and the kindred veterinary medical associations, and contribute his mite to the advancement of his profession, for by so doing he will learn to take a nobler interest in the onward progress of his profession, and I guarantee him that he will find himself a better, a happier, and a wiser man in the end.

The toasts of "The Provincial Veterinary Medical Association" was given from the vice-chair, and responded to by Mr. Storrar, who said he believed that the existence of such associations would be a means by which the bigotry which was usually connected with a young profession would be done away with.

The usual healths of the Chairman, Vice-Chairman, the Ladies, &c., being given, and heartily responded to, the meeting broke up, "each glad they met, and sorry to part."

GEORGE MORGAN, M.R.C.V.S.,
Hon. Secretary.

Liverpool; Sept., 1866.

ARMY APPOINTMENT.

WAR OFFICE, PALL MALL; *Aug.* 31*st.*

Cape Mounted Rifles.—Veterinary Surgeon Thomas Paton, to be promoted to the First Class, *vice* Barker, 7th Hussars, placed upon half-pay.

MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS WHO HAVE BEEN APPOINTED INSPECTORS FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton
Jones, A. A., Biggleswade
New, A., Ampthill
Rogerson, T. W., Bedford

Berkshire.

Allnutt, Henry, Windsor
Bailey, Robert, Lambourn
Bland, W. C., Newbury
Buckridge, W., Hungerford
Drewe, G. A., Abingdon
Field, W. A., Newbury
Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Simpson, Henry L., Windsor
Waterman, C., Reading
Wheatley, W. A., Reading

Buckinghamshire.

Beeson, S., Chalfont
Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
East, William, Princes Risborough
Lepper, Henry, Aylesbury
Lepper, George Andrew, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Rayment, S. J., Ashendon
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Barrow, Richard, Newmarket
Barrow, W., ditto
Barrow, Charles, ditto
Knowles, Robert, Wisbeach
Scruby, Thomas, Royston
Sparrow, S., Cambridge
Wallis, Page, Cambridge
Webb, G. B., Balsham, Linton

Cheshire.

Barker, George, Brereton, near Congleton
Barker, Richard, Middlewich
Darling, James, Duddon, Tarvin
Darwell, George Henry, Knutsford
Dunn, William, Tarporley
Greaves, John, Altrincham
Maxfield, Robert, Congleton
Taylor, John Boardman, Hyde
Willett, W. G., Northwich
Wyche, T., Wilmslow

Cornwall.

Arnall, George, Bodmin
Lamb, G. W., Liskeard
Page, George, Truro
Tucker, E. S., St. Germans
Raddall, Warne, South Petherwin

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Fisher, John, Whitehaven
Little, Joseph, Alston
Thompson, Henry, Aspatria
Howe, Jacob, Sebergham

Derbyshire.

Flower, Henry, Derby
Hudson, T. T., Bolsover
Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, James, Exeter
Austin, Thomas D., Honiton
Bickford, Alfred, Totnes
Bickford, W. J., Kingsbridge
Brewer, William, Barnstaple
Collings, John J., Plymouth

DEVONSHIRE (*continued*).

Dyer, Richard H., Torquay
Ferris, William, Dartmouth
Gregory, T. D., Bideford
Heath, James P., Exeter
Hewish, John, Barnstaple
Leach, Edward, North-Tawton
Ward, William, Crediton
Watson, Alfred, Tiverton

DORSETSHIRE.

Redwood, Joseph, Dorchester

DURHAM.

Adamson, Thomas, Barnard Castle
Allison, William, Thornley
Dudgeon, David, Sunderland
Foreman, Thomas, Leadgate
Hall, Robert, Stockton-on-Tees
Hedley, Matthew, Darlington
Hunting, Charles, South Hetton
Loades, A. M., Bishop Auckland
Mann, Andrew, Chester-le-Street
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Peele, J. E., Durham
Plews, Thomas, Stockton
Thompson, Thomas, Sunderland

ESSEX.

Arthy, H. B., Stanway
Brook, T., Chipping Ongar
Easton, W. G., Woodford
Helmore, William, Stratford
Hutton, Robert R., Toppesfield
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Taylor, Rowland, Colchester
Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, Sampford

GLOUCESTERSHIRE.

Morgan, C., Stroud
Thomas, Richard W., Tewkesbury

HAMPSHIRE.

Barford, John Davis, Southampton
Cartwright, Charles, Bishop's Waltham
Clarke, W. M., Christchurch
Colebrook, Charles, Basingstoke
Gates, Robert, Andover
Gould, George James, Southampton
Gregory, J. B., Portsmouth
Redford, Thomas, Winchester
Verney, R. G., Stow-on-the-Wold

HEREFORDSHIRE.

Barling, F. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford

HERTFORDSHIRE.

Hirst, Charles, Barnet
Proctor, Harrison, Hertford
Rogerson, Ed., St. Albans
Rushall, Alfred, Bishop's Stortford
Webb, T. G., Hockerell
Wilson, William, Berkhampstead

HUNTINGDONSHIRE.

Fordham, T. B., Godmanchester
Fuller, Alfred, Ramsey
Garner, Brand, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, W., Margate.
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Chattell, William F. H., Bromley
Cooper, John, Ashe-next-Sandwich
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Crowhurst, W. Henry, ditto
Fordham, George, Willesborough
Gregory, T., Tunbridge
Hogben, Henry, Hythe
Ingersoll, Fred. Richard, Lewisham
Martin, John Bean, Rochester
Morgan, C., Nonnington
Noakes, Henry, Brenchly
Plomley, John Croft, Maidstone
Poulton, T. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Anderton, J. W., Burnley
Brown, George, Oldham
Buckley, Samuel L., Blackburn
Challenor, J. W., Worsley
Cunliffe, Thos., Church
Ellis, John, Liverpool
Ellis, Peter, ditto
Gibson, A. L., Manchester
Haslam, J., Manchester
Heaps, William, Preston
Heyes, Gilbert, Liverpool
Kirkman, James, Blackburn
Lawson, Alexander, Bolton
Lawton, Enoch, Ashton-under-Lyne

LANCASHIRE (*continued*).

Lowe, James, Leigh
Nuttall, Ed., Rawtenstall
Polding, J. P., Bury
Richmond, Henry, Chorley
Rothwell, J. P., Rochdale
Smith, Benjamin, Ulverston
Smith, John, Ormskirk
Taylor, W., Manchester
Taylor, James, Oldham
Twist, Charles, Woolton
Whitlock, William, Manchester
Whittle, William, Worsley.
Welsby, Joseph, Prescot
Worthington, Wm., Wrightington
Yates, John, St. Helens

LEICESTERSHIRE.

Bailey, E., sen., Leicester
Bailey, Edward, jun., ditto
Blunt, H., Lutterworth
Brown, S., Melton
Goodall, H. J., Waltham
Gray, Charles, Kibworth
Wiggins, John, Market Harborough

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, George Colley, Crowland
Bland, William James, Boston
Chapman, John, Gainsborough
Clarke, Thomas Allan, Horncastle
Clayworth, Joseph, Spilsby
Cutting, Henry, Market-Rasen
Darby, Thomas, Louth
Dickinson, J. G., Boston
Dobson, John, Wragby
Dobson, R. W., Holbeach
Gresswell, Daniel, Louth
Hall, William, Northkillingholme
Hardy, R. T., Sleaford
Hardy, Robert, Grantham
Howse, Henry, Lincoln
Hutson, Curtis, Market Rasen
McHugh, John T., Brigg
Metherell, Richard, Spalding
Roberts, John Thomas, Long Sutton
Santy, Arthur H., Market Deeping
Sharman, Thomas B., Old Leake
Thomson, G., Horncastle
Wattam, John, Stamford
Wentworth, George, Laceby
Wilson, Robert, Caistor
Wyer, Daniel, Folkingham
Wyer, Goforth, Donington

MIDDLESEX.

Boughton, Thomas Peter, Hounslow

MIDDLESEX (*continued*).

Broad, James C., Market Street, Paddington
Dale, William, Stanmore
Dexter, Thomas, 8, Motcombe Street, Chelsea
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Leggatt, J., Hanwell
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shaw, H. R., Sydenham
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Stanley, Thomas, Edmonton
Tegg, George, Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth
Wiltshire, Thomas D., Rhymney, near Tredegar
Wilkes, Thomas, Newport

NORFOLK.

Baldwin, George Thomas, Fakenham
Barcham, Robert, Paston
Beart, Walter James, Lynn
Bower, W. J. T., East Rudham
Buckingham, John, Barnham Broom
Buckingham, H., Harleston
Carter, Charles N., Swaffham
Carter, James, Litcham
Carter, Richard, East Dereham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Aylsham
Ellis, William, Hempnall
Emms, Henry G., Foulsham
Hammond, John, jun., Bale, Thetford
Heffer, Robert, Downham Market
Holl, Lewis, Outwell
King, Edward James, Diss
Mays, Thomas, Wymondham
Overed, John Davey, Blofield
Plumbley, George H., Skeyton
Rattee, Daniel H., Hapton
Riches, John Worship, Acle
Sharpen, Robert, Gresham
Shipley, William, North Walsham

NORFOLK (*continued*).

Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Aris, Benjamin B., Wellingborough
Branford, Wm. Catton, Oundle
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Richardson, W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long-benton
Boag, William, Morpeth
Fairbairn, John, Alnwick
Hubbick, Joseph, ditto
Hunter, H., Newcastle-upon-Tyne
M'Gregor, Daniel, Seaton Delaval
Stephenson, C., Newcastle-on-Tyne
Wilkinson, Henry Etridge, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Barlow, Robert, Cotgrave
Cave, Thomas, Nottingham
Cope, W., Newark
Hudson, Richard, Moorgate, Retford
Hutchinson, Henry, East Retford
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Talbot, Francis, Whatton
Wilson, Stretton R., Ollerton
Young, Wm., Southwell

OXFORDSHIRE.

Bull, Alban, Hooknorton
Jennings, William, Bicester
Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury
Wadlow, C. H., Oxford

RUTLAND.

Parnell, Charles, Oakham

SHROPSHIRE.

Atcherley, James, Bridgenorth
Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Dorrington
Jenks, John, Ellesmere
Jones, James B., Ludlow
Litt, William, Shrewsbury

SHROPSHIRE (*continued*).

Roberts, Thomas, Oswestry

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Coles, William, Kilmersdon
Dring, C. J., Bath
Emms, William, Ilminster
Gregory, C. W., Bristol.
Hutchings, William, Kimpton
James, Sidney, Frome
Symes, Charles, Wincanton
Symes, Thomas, Yeovil
Whitmore, George, Langport
Whitmore, Absalom, Shepton Mallet

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Cartwright, H. J., Wolverhampton
Checketts, Benjamin, Wolverhampton
Coe, Joseph, Stoke-upon-Trent
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Richard, Wolverhampton
Pritchard, Harry D., ditto
Robinson, William, Tamworth
Walters, Robert George, Newport

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow
Shorten, A. J., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russel Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes, W., John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lowe, C., Dockhead, Bermondsey
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham

SURREY (*continued*).
Moon, James, Kingston-on-Thames
Stanley, Frederick Thos., Borough
Turner, Charles, Croydon

SUSSEX.
Burt, Walter, Brighton
Burt, William, jun., ditto
Callow, John, Horsham
Crofts, Henry, Arundel
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.
Elkington, R., Coventry
Hunt, R. L., Edgbaston
Ison, William Charles, Atherstone
Mather, Frederick, Warwick
Parker, J. M., Birmingham
Proctor, Alfred B., Meriden
Rose, James, Warwick
Stanley, Edward, Birmingham
Stanley, Wm. Thomas, Leamington
Walker, Alfred, Rugby
Watson, Walker, ditto

WESTMORELAND.
Eastcott, W., Kendal
Herd, John, Appleby

WILTSHIRE.
Aubrey, Thomas, Salisbury
Coleman, John, Salisbury
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.
Barker, E. T., Pershore
Blakeway, Francis, Stourbridge
Boulton, R., Bromsgrove
Butler, T. W., Evesham
Harber, W. Alex., Kidderminster
Huntress, J. R., Dudley
Perrins, Henry Rose, Worcester

YORKSHIRE.
Anderton, J. W., Skipton-in-Craven
Barker, Charles, New Malton
Barker, William, Middlesborough
Bourdass, George, Bridlington

YORKSHIRE (*continued*).
Bowman, J., Elvington
Bowman, Thomas, Croome
Boyce, J. H., Goole
Broughton, W., Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Case, F. M. M., Rotherham
Collins, Thomas, Bradford
Cooper, J., Market Weighton
Cortis, Richard, Shipton
Cuthbert, John, Leeds
Danby, F., Driffield
Day, Frederick, York
Dearlove, William, Harrogate
Douthwait, William, Beverley
Dray, Edward C., Leeds
Edmundson, W., Hornby
Elam, William, Huddersfield
Emmot, D. C., Keighley
Fallding, S. F., Wakefield
Freeman, Joseph, Hull
Fryer, J., Kirby
Hain, George, Thirsk
Harrison, T. M., Thirsk
Hedley, F., Richmond
Hedley, J. W., ditto
Holt, H. L., Northallerton
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Lockwood, N. J., Kingston-upon-Hull
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Naylor, E. M., Wakefield
Nicholson, Robert, Womersley
Patterson, Charles, Dewsbury
Pemberton, G. H., Knaresborough
Pennock, James, York
Ringrose, J., Weaverthorpe
Robinson, A. E. G., Snaith
Scriven, William, Aberford
Secker, Charles, Knaresborough
Secker, Thomas, Ripon
Stevenson, John, Whitby
Stoddard, John, Richmond
Stone, Matthew, Doncaster
Taylor, W. Baxter, South Anston
Thornton, James, Easingwold

WALES.

Brecknockshire.

Ferris, John, Brecon
Llewellyn, H., Brynmawr, Brecon
Stokoe, Thomas, Hay

Cardiganshire.

Bodington, George, Canton, Cardiff

Carnarvonshire.

Williams, Rumsey James, Rhyddallt

Denbighshire.

Edwards, John, Abergele
Kennedy, Thomas, Wrexham
Rowlands, David, Llanrhaiadr-yn-Mochnant, Oswestry

Pembrokeshire.

James, D. E., Old Bridge, Haverford West

SCOTLAND.

Aberdeenshire.

Thomson, James, School Hill, Aberdeen

Ayrshire.

Aitken, William, Kilmarnock
Irvine, William, Pirleyhill, Girvan
Tennant, C., Tunnock, Maybole

Berwickshire.

Baillie, James, Lauder
Hogarth, George, Berwick
Lothian, William, Dunse
Watson, Robert, Coldstream

Clackmannanshire.

Knight, Robert, Alloa

Dumbartonshire.

Gardner, James, Alexandria
M'Dougall, James, Old Kilpatrick
Sproull, James, Milngavie

Dumfriesshire.

Paterson, Bell Robert, Dumfries

Edinburghshire.

Aitken, John, West Hart Street, Dalkeith
Currie, John, Caitha Stow
Grainger, James, Rosewell, Lasswade, Edinburgh
Worthington, William, Clyde Street, Edinburgh

Fifeshire.

Balfour, Andrew, Balwearie Mill, Kirkcaldy
Duncan, A., Colinsburgh
Morris, John, Torryburn, by Dunfermline

Forfarshire.

Keay, James, Forfar
Lyon, William, Forfar
Sandeman, James, Kerriemuir
Taylor, Alexander, Brechin

Haddingtonshire.

Muir, Alexander C., Dunbar
Storie, Francis, East Linton, Prestonkirk
Young, George, Haddington

Kincardineshire.

Low, John, Auchinzeoch, Fordoun
Robertson, Alexander, Stonehaven
Simpson, Andrew, Fettercairn

Kinross-shire.

Hepburn, John, Milnathort, Kinross

Kirkcudbrightshire.

Irving, John, Castle Douglas

Lanarkshire.

Cockburn, William, Glasgow
Finlater, Richard, Carstairs-by-Lanark
M'Call, James, Glasgow
Pettigrew, Robert, Strathaven
Robertson, Adam C., Airdrie
Steele, John, Biggar
Young, David, Hamilton

Linlithgowshire.

Borthwick, John, Kirkliston
Nimmo, Alexander, Linlithgow

Peeblesshire.

Ferguson, Patrick, Peebles
Young, William, Hallmyre Dean, Leadburn

PERTHSHIRE.

Connacher, Charles, Perth
Galloway, Peter, Loan of Errol.
Glennie, Mathew, Camp Muir, Coupar-Angus
M'Gregor, Andrew, Mouzievaird, Crieff
Panton, John, Blair Athole
Robertson, Daniel, Kenmore, Dunkeld
Robertson, John, Madderty, Crieff
Smail, D. C., Blairgowrie

RENFREWSHIRE.

Donaldson, John, Paisley
Pottie, Alexander, Renfrew
Robinson, Alexander, Greenock

ROXBURGHSHIRE.

Bowie, Messrs. Andrew and James, Hawick
Robertson, William, Kelso
Smith, Alexander, Appletreehall, Hawick

STIRLINGSHIRE.

Waugh, William, Stirling

WITHDRAWAL OF THE PERMISSION TO USE METHYLATED SPIRIT IN THE PREPARATION OF MEDICINES.

When it is remembered that spirit of wine costs about twenty-five shillings a gallon, while methylated spirit, consisting of ninety parts of spirit of wine and ten parts of wood spirit, may be purchased for six shillings and sixpence a gallon, one can readily understand how seriously an Act of Parliament recently passed will affect the interests of druggists, especially those who are principally concerned in supplying medicines to veterinary surgeons. For the information of our readers, we beg to direct their attention to the following extract from "AN ACT TO AMEND THE LAWS RELATING TO THE INLAND REVENUE."

[*6th August*, 1866.]

Methylated Preparations.

"8. No Person shall use Methylated Spirit or any Derivative thereof in the Manufacture, Composition, or Preparation of any Article whatsoever capable of being used either wholly or partially as a Beverage or internally as a Medicine; and if any person shall use Methylated Spirit or any Derivative thereof in the Manufacture, Composition, or Preparation of any Article as aforesaid, or shall sell or have in his Possession any such Article in the Manufacture, Composition, or Preparation whereof any Methylated Spirit, or any Derivative thereof, shall have been used, he shall forfeit the Sum of One hundred Pounds, and such Article shall be forfeited, together with the Vessels or Packages containing the same: Provided always, that nothing herein contained shall apply to the Use of Methylated Spirit, or any Derivative thereof, in the Manufacture, Composition, or Preparation of Sulphuric Ether or Chloroform, or prevent the Sale or Possession of any Sulphuric Ether or Chloroform: Provided also, that nothing herein contained shall prejudice or affect the Power of the Commissioners of Inland Revenue to allow Methylated Spirit to be used by such Persons as they may authorise in such Branches of the Arts and Manufactures of the United Kingdom as the said Commissioners may sanction or approve.

"9. If any Person shall, after any Methylated Spirit shall have been mixed with Gum Resin for forming the Mixture known as 'Finish,' or any like Mixture, separate the Gum Resin from the said Methylated Spirit, or alter the said Mixture in any Manner except by adding thereto a further Quantity of Gum Resin, or any Article for the sole Purpose of colouring the same, he shall forfeit the Sum of Two hundred Pounds, and the said Spirit and Mixture respectively so separated or altered as aforesaid shall be forfeited, together with the Vessels or other Packages containing the same."

It seems to us that while there are good reasons for the non-employment of methylated tinctures for internal use in human practice, there exist no objections to its employment in similar preparations which are to be administered to the lower animals. We are therefore extremely sorry to find that the privilege which has been enjoyed for years, and which has been most highly prized, should, through the dishonesty of a few persons, have been withdrawn.

It is to be hoped, however, that veterinary surgeons and veterinary druggists will endeavour to obtain special authority from the Board of Inland Revenue to continue to use methylated spirit in the manufacture of their tinctures and similar preparations.

THE

VETERINARIAN.

VOL. XXXIX. No. 467. NOVEMBER, 1866. Fourth Series. No. 143.

Communications and Cases

OPENING OF THE SESSION 1866-67 AT THE ROYAL VETERINARY COLLEGE. INTRODUCTORY ADDRESS BY PROFESSOR SIMONDS.

Gentlemen,—The privilege of addressing you on this occasion has by ordinary routine devolved on me. I could have wished, however, for your sakes, that it had been otherwise; for so heavy have been the demands on my time, more especially during the last month, that I have had little opportunity to prepare a fitting inaugural oration.

To the members of the profession who have honoured me by their presence an especial apology is required, as many are here at great inconvenience to themselves, and others have travelled long distances in order to be present on this our opening day.

On occasions like the present, custom has wisely ordered that the chief object of the lecturer shall be to bring before the pupils an outline of their studies, show them the facilities which exist for the obtainment of information, and offer them some words of advice and friendly counsel; and as it is not my intention to depart very widely from this course, so I must ask the kind indulgence of the senior and non-professional portion of my audience to bear with me in my exposition.

To you, students, I would say that once more you are called upon to take active service in the cause of science, and to do battle with ignorance and empiricism. No din of arms, however, nor sound

of trumpets attend your fight, for you have to contend not with the ambitions so much as with the prejudices of men.

Protected by the shield of science, your watchword is "Forward," and your war-cry "Victory." The clouds of ignorance may darken your course; but these will as certainly disperse before advancing knowledge, as do the mists which enshroud the mountain-top before the rising sun. Nor do you fight alone, for veterans and tried soldiers crowd your ranks, and on these you may safely rely to lead you onwards. The standard being planted, it devolves on you not merely to defend, but to advance its position, and raise it even higher and higher, that it may be seen from afar, and others be summoned to rally round and protect it from all assaults of the enemies of progress.

But to drop metaphor. Remember that the requirements of your profession become greater year by year, and that on you the demand for their fulfilment is chiefly made. Having determined what is right, set yourselves honestly to work, and go boldly forwards, regardless alike of the threatenings of censure or the allurements of flattery. Love your profession for its own sake, or you will neither honour it in the eyes of the world, nor succeed in it yourselves. Bear in mind that in whatever position a man may be placed, success will not await him unless he takes a pleasure in performing the daily duties of his calling.

During the past year events have occurred which have brought the state of Veterinary Science prominently before the public. On all sides regrets have met the ear that so many uneducated men are ranked as veterinary surgeons. Hitherto most people have had little knowledge of us as a profession, but have regarded us as one with the farrier and the cowleech.

This view is humbling enough, after the years which have passed since we were recognised by law, and entitled to take position as a profession.

Notwithstanding this, I am not among those who would despair; for I believe that the same cause which has given birth to the remark will in the end prove the resuscitator of our profession, and place it in that position it rightly merits.

The means which are being adopted by this Institution alone will be found to be a powerful auxiliary to this end, as no pupil is now allowed to enter on his studies here without a proof of his possessing the groundwork of a good English education. Here-

after even this must be extended, so that by widening the basis the superstructure may be rendered more secure.

Besides a general knowledge, there are few professions which require a greater diversity of special information than ours, although a far more erudite education may be needed by many. Among these requirements an acquaintance with the various systems of agriculture stand prominently forwards, for they have much to do with the health of the farmers' stock. The diseases which prevail in heavy land districts are almost unknown in light, and *vice versa*. The system of farming necessarily depends on the character of the soil, and this in its turn is due to the geology of the district. If you ask me, Do we, then, require to be geologists? I answer, Yes, in so far as that science is connected with the soil and the particular substrata on which it rests. Beyond this the study may not be absolutely necessary, however elevating and ennobling when rightly used it may be.

By way of illustration, look to the enervating effects of wet clay soils, and their connection with dropsical diseases, and, not unfrequently, with rot in sheep. Look also at the ill effects of sandy soils, deficient as they are in the elements required to produce sufficient nutriment in the food of growing animals.

There is yet another and important view to be taken of agricultural science in its connection with vegetable physiology, namely, that the present system of raising large crops from the soil by the use of artificial manures is probably productive of disease in animals. Plants may be brought into a state of plethora which will as completely unfit them for food, as animals similarly placed would be unfitted to undergo severe exertion without the occurrence of disease. Besides this, plethoric animals, as is well known, are more susceptible to the influences of all the ordinary causes of disease, and experience is proving that plants quickly forced to maturity are similarly circumstanced. It is vain to suppose that the health of animals can be long maintained when they are exclusively fed on forced or imperfectly developed vegetables. By these remarks, however, I wish not to be understood as objecting, in the abstract, to the employment of artificial manures, but rather as offering a caution against the too free and frequent use of them to such plants as are used in their crude state as food for cattle and sheep.

The light land farmer, again, not unfrequently brings into operation another cause of disease, especially under certain condi-

tions of the atmosphere. The system which he of necessity adopts of manuring the so-called artificial grasses on the surface as a preparation for the wheat crop, frequently causes the sudden death of sheep when fed thereon. The reason of this is often not to be found merely in the increased amount of vegetable matter, or in the rapidity with which it has been produced. The cause, indeed, would rather appear to depend on the decomposition of the manure; and the modern view of decomposition will perhaps help to explain this, and show, at the same time, the relation which exists between veterinary science and chemistry. In a lecture recently delivered by my colleague, Professor Tuson, before the Royal College of Veterinary Surgeons, he showed that until 1862 the ordinary theories of putrefaction and fermentation were accepted. At that time Pasteur gave to the world the results of his laborious and masterly researches on these phenomena, proving that putrefaction and fermentation were not purely chemical, but physiological processes, and that the chemical effects observable were the accompaniments, as results of so-called vital acts. Pasteur proved, by the most sagaciously contrived and carefully conducted experiments, that the atmosphere in most situations is charged with living beings, and that they are the true exciters or causes of putrefaction and fermentation. These organisms alight from the atmosphere, come in contact with dead animal and vegetable matters, and by a vital process decompose such bodies, and abstract and assimilate from them the elements required for their own nutrition and growth. At the same time the organisms themselves increase and multiply very rapidly, and in turn become wafted from place to place, ready and capable to effect the decomposition of other quantities of dead organised materials. These living beings are known as *mucedines* and *bacteria*.

"Now, when we reflect," added the lecturer, "on the nature of decomposition and fermentation, and the character and power of the minute beings which give rise to these processes, the question naturally arises in our minds—May not certain of these minute but formidable creatures, or their germs, or both, which can be detected in the atmosphere, and which, therefore, are being constantly inhaled by animals, be the excitants or aggravators of some of the well-known epidemic and other diseases? On inquiry we shall find that, although the evidence in this direction is as yet neither abundant nor conclusive, we have nevertheless sufficient ground for believing that under peculiar conditions of the system certain

maladies may be caused by the introduction into the body of the low forms of vitality to which reference has been made."

In these remarks there will be found more than a gleam of light respecting the frequent outbreaks of that mysterious and fatal disease known as splenic apoplexy. The microscope has revealed that the blood of animals dying of this affection is loaded with *bacteria*. May not these have had their origin in the decomposing manure? and may not the sudden death of sheep and cattle from splenic apoplexy, and its frequent extension from them to other animals on the farm, be explained by their being surrounded with myriads of these beings, while feeding on grasses manured after the maaner to which I have alluded?

Without referring at greater length to an abstruse subject of this kind, it may be remarked that every day's experience is convincing us more fully that disease and death are often to be referred in another way directly to the food of animals. How could we expect otherwise, seeing that we have chiefly to do with herbivorous creatures, and that very many plants indigenous to the soil are springing up with their ordinary food, which possess not merely injurious, but positively poisonous, properties? Instinct doubtless leads herbivorous mammals, as a rule, to avoid these, or their baneful effects would be increased in a tenfold degree. The annals of veterinary medicine are replete with instances of this kind of poisoning, and the pages of the *Veterinarian* often contain similar cases. It may be, perhaps, that Nature, ever wise in all her operations, thus teaches that, by the free dispersion of such plants, we possess a ready means to the removal of disease in some of its varied forms, it being an oft-repeated axiom that what is food to one creature is poison to another. Be this as it may, we see enough in the circumstance to prove that botany is intimately connected with pathology, and has a direct bearing on the practice of veterinary medicine.

Again, let us look at other ordinary causes in the production of disease, and we shall find potent ones in the variations of temperature and in the more common changes of the weather. Take the present season as an example, and I venture to predict that the large fall of rain which has taken place since the middle of the year down to the present time, associated as it has been with an elevated temperature, has laid and is laying the foundation for an attack of rot among the sheep. You who are familiar with the natural history of the liver fluke know how this is brought about. The rot,

perhaps, may be only partial; but on our undrained clay pastures, and the feeding-grounds of our valleys, it is sure to obtain.

I have thus attempted to show that disease is often traceable to the nature of the food supplied to animals; but besides this, remember that it is found to depend both on the manner in which the food has been prepared, and on the way in which it is used. The education of the veterinary surgeon should be made, then, to embrace a knowledge of all these things. He should be as familiar with the habits of animals, and the influence of external causes over their susceptibilities, as with the nature of their diseases and modes by which these are to be combated. Indeed, without a knowledge of the one he can never excel in the other.

I pass to more special matters; for under existing circumstances, and standing as I do, it is to be expected that something be said on the still great question of the cattle plague. At this distance of time it is unnecessary to repeat my convictions as to how the disease reached this country. Experience has tended to confirm their correctness, and to show that it is to the importation of Russian, and not Hungarian or other foreign cattle, we must look as the cause of the evil.

It is now a matter of history that within three weeks of the exposure for sale of some cattle from Russia in the Metropolitan Market, the cows in two or three of the London dairies were the first known victims of the plague; and that the disease which had been existing in one of them very near to the market for about a week was recognised by me on July 4th, 1865. By this time, however, the malady had not only spread in the metropolis, but had gained a footing in no less than four places in Norfolk; and within a day or two afterwards it was recognised in Suffolk, Shropshire, and Devonshire. By the end of July, Berks, Bucks, Essex, Kent, Surrey, Sussex, Northumberland, Staffordshire, and Warwickshire had become infected; and in most of these counties the malady was satisfactorily shown to have emanated from the Metropolitan Cattle Market. From this time the disease spread in all directions, the attacks gradually rising until they reached, in the week ending Feb. 17th, 1866, the alarming number of 15,706. The first Order of Council was dated July 14th, 1865; and from that period until now, Order has succeeded Order, with more or less influence in checking the progress of the malady, and providing for the altered state of things arising out of its existence.

The passing of the Cattle Plague Act was, however, the real cause

of the diminution of the cases which has since taken place, and which emboldens us to hope that ere long the disease will be entirely exterminated. For the first time in the history of the visitation the attacks were returned as under 100 for the week ending September 1st, 99 being the exact number reported by the inspectors. On September 15th these had fallen to 58, when a slight increase again took place, the next official return giving them as 67. It is to be remembered, however, that a focus of the disease still exists—Oct. 1st—in the metropolis, and in no less than eleven counties, ready to extend its area if a withdrawal of the restrictions were at once to take place.

Among other important steps taken by the Government to arrest the fatal malady was the appointment of a Royal Commission, one of the members of which was the Principal of this Institution. The amount of information obtained by the Commission was considerable, and the publication of this, together with the minutes of evidence and the reports of the several scientific gentlemen engaged to investigate the pathology, treatment, and prevention of the disease, form the most valuable and complete history of the cattle plague probably to be found in the world.

The application of curative means was confided to the care of Professor Varnell and Assistant-Professor Pritchard; and the able report of these gentlemen I would recommend to your careful perusal, especially to those who still cherish the hope that a cure for the plague may be found. A few salient points in connection with this subject can only be referred to; and therefore I shall content myself by quoting from the official returns the amount of loss which England herself, apart from other parts of Great Britain, has sustained. The total attacks are returned as 198,406. The animals killed (diseased) amount to 77,508; those which died, to 90,415; the recovered, to 21,589; and the unaccounted for, to 8,894: besides which, no less than 38,356 have been slaughtered healthy, to prevent the spread of the malady. These figures are truly formidable; but they fail to show a tithe part of the distress and ruin which has been brought on hundreds of thriving and industrious farmers and cattle-owners by this dreadful visitation.

To pass to Scotland. By the middle of last July the disease had been effectually stamped out in Scotland; and in consequence thereof an Order of Council, bearing date August 11th, was issued, suspending all restrictions as to the movements of cattle in that country. The Order set forth that—

"From and after the 13th day of August, 1866, and subject to the further Orders of the Lords of the said Council, all the provisions contained in any Order of Council restraining or regulating the movements of animals within Scotland, or any part thereof, and all Orders of any Local Authority in Scotland made under or in virtue thereof, and all the Provisions contained in any Order of Council prohibiting or regulating the holding of markets, fairs, auctions, exhibitions, or sale of cattle within Scotland, or any part thereof, and all Orders of any Local Authority in Scotland made under or in virtue thereof, shall be suspended; provided that nothing herein contained shall prevent any Local Authority in Scotland, or the officer or officers appointed thereby, from granting 'fat stock or store stock' licences, under the Order of 11th April, 1866, for the removal of cattle from Scotland to England or elsewhere beyond Scotland."

Subsequent to the issuing of the Order, five cases were officially reported as having occurred at West Kilbride, County of Ayr. As may be easily understood, this supposed fresh outbreak excited the liveliest apprehensions that the disease might again obtain a footing in the country. These were, however, quickly set at rest by further professional examination, Professor McCall being ordered to specially investigate the facts of the supposed outbreak. This gentleman reported that the animals had not died of cattle plague, but of splenic apoplexy; an opinion which was coincided in by the inspector who had originally reported the cases, and also by other inspectors whom he had consulted. So keenly alive, however, were the Caledonians to the necessity of preserving Scotland free, that although an Order of Council was issued to prohibit the removal of stock from England into Scotland, the Highland and Agricultural Society, and also the Chamber of Agriculture, memorialised the Lords of the Council to suspend the great autumnal cattle trysts and markets.

The memorial of the Highland Society set forth—1st, "That the holding of lean and store markets for cattle should for the present be entirely suspended, and that especially Falkirk cattle trysts should not be held. That the directors had come to this resolution after communication with all the local authorities in Scotland."

The memorial of the Chamber of Agriculture pointed out that the Order of Council of August 11th did not secure Scotland against the re-introduction of the cattle plague from England, and it urged that the transport of cattle from England should be fenced

about with more stringent conditions as to licence, &c. The Chamber, moreover, "humbly recommended and earnestly pressed upon their Lordships the necessity, under existing circumstances, of prohibiting all public fairs, trysts, or public markets for the sale of store cattle, unless such markets as may be expressly sanctioned by the local authority of the place where the same are to be held."

These memorials were fully considered by the Lords of the Council, and an answer was returned to the effect that as both Scotland and Ireland were perfectly free from cattle plague, and as no cattle or sheep could enter Scotland from England, their Lordships did not see sufficient reason to vary or revoke their Order of August 11th. The Falkirk trysts were consequently held, and without any injurious consequences; and from the date of the Order Scotland has been as free, with regard to movements of animals within her borders, as she was prior to the outbreak of the cattle plague.

It appears from the official returns that the attacks in Scotland amount to 46,861, being 4,841 per cent. on the entire stock of the country.

Of this number there died 28,088, and were killed 6,263, making a loss of 34,351. 10,707 recovered, and 1,803 are unaccounted for, the larger part of which may probably be regarded as having died. Scotland, too, has lost 13,444 cattle by slaughter, to limit the spread of the infection. The disease prevailed in Scotland for a year, the first cases being reported as having occurred July 18th, 1865, and the last on July 14th, 1866.

We come now to Wales. It has somewhat singularly happened that, with the exception of two counties, no part of the Principality has suffered from the disease. These counties are Flint and Denbigh. The disease is said to have first visited Flintshire as early as July, 1865; but doubts may not unreasonably be entertained as to the correctness of this statement. Be this as it may, the malady was established in September both in Flintshire and Denbighshire, and continued down to the third week of August last, when for the first time no cases were returned. Wales has since remained free from the disease. In the aggregate, 8,388 of the Cambrian cattle have been attacked; and of these 5,794 died, 1,180 were killed, and 1,117 recovered, leaving 297 unaccounted for. In Wales, also, 528 were slaughtered healthy. The confinement of the disease to the

counties named was doubtless due in a great measure to legislative enactments.

To come next to Ireland. As may be easily understood, from the first appearance of the plague in England the greatest solicitude existed with regard to Ireland, should the disease unhappily extend to that country. Very early, legislative measures, far more stringent than those employed in England or Scotland, were adopted to protect the cattle of the Sister Isle. For many months these proved fully effective; but suddenly, and totally unexpectedly, in the month of April last, the disease appeared in the North of Ireland, at Drennan, near to Lisburn, County Down. How the contagion was conveyed there has never been satisfactorily ascertained. By some it is supposed to have been taken from Scotland by drovers, whilst by others it is thought that its introduction was not altogether accidental. A fair was held about four miles from Drennan, a week previous to the appearance of the disease, but none of the afterwards infected cattle had been taken there, nor were any drovers from either Scotland or England known to have gone into the parish in which they were kept.

I am indebted to Professor Brown, who was specially commissioned to investigate the outbreak, for the following details:

On May 13th, he states, notice was received of an outbreak of cattle plague in County Down, at a place called Drennan, about seven miles from Belfast, and three from Lisburn.

On inquiry, however, it was found that the disease had been existing there since April 8th, on which day a cow was attacked with plague on a farm belonging to John McKee.

Other cases occurred on the following days:—April 13th, 16th, 19th, 28th, 30th; May 3rd, 10th, 11th, 12th, 13th, and 17th—the disease having extended during this period to three adjoining farms. Thus, from John McKee's it spread to W. J. Erskine's, forty perches away; then to W. McKee's, ten perches distant; and from thence to Rea's, closely adjacent. The owners of these several farms had assisted each other in drenching the sick animals, and in skinning and burying the carcases, not knowing the nature of the disease.

From the same centre the malady likewise extended to McCartney's, at Cabragh, one mile and a half from Drennan; and, after an interval of twenty-one days, *namely*, on June 7th, it was reported to have broken out at McKetterick's farm, half a mile from Drennan. The report of the outbreak, however, was not

received, as has been stated, until June 7th; but, on inquiry, it was found that three animals had died and been buried before the inspector was informed. On his arrival he further found that two others were lying dead and two more were ill, making, in all, seven animals which had been attacked.

On June 13th all the remaining stock on this farm, consisting of three cows and a calf, was killed. Two days afterwards a case occurred on Erskine's farm, whose cattle were in the next field.

Professor Brown saw this cow on June 18th, and found all the symptoms of plague to be well developed. The post-mortem appearances were likewise perfectly characteristic of the malady.

On June 20th, 21st, and 25th, the rest of Erskine's cattle were attacked. These were also examined by Mr. Brown.

No more cases occurred in this part of Ireland; but on June 22nd the Professor was called to inspect some cattle at Ballymaskea, Co. Meath. Here he found one dead from plague and another dying. This and three others that had been herded with the diseased were at once killed and buried.

On July 5th another case occurred on the next farm, and on his (Mr. Brown's) arrival the animal was found to be dying. Eight other animals were on the farm, and these were immediately killed and buried.

No more cases occurred. No cause could be assigned for the outbreak in either of these instances, the poison, as in the County of Down, having been carried to the place in some mysterious manner.

The arrangements for meeting the emergency were perfect. Cordons were drawn round the infected districts, and strictly kept by the constabulary. All the diseased animals were killed and buried, and also every one that had been in contact with them. All persons going near the place were disinfected by the constabulary, and no horses nor vehicles were allowed to be taken beyond the infected boundaries.

The entire number of animals exposed to the infection was fifty; and out of these twenty-nine were attacked, and either died or were killed, and twenty-one were slaughtered healthy.

Nothing can show more clearly the propriety of the "stamping-out process" than this result. In it we have a parallel with what took place in France, where only 43 animals, healthy and diseased, were sacrificed to the poleaxe, the country being thereby freed from the plague. It is fearful to contemplate the

distress which would have attended the spread of the disease in Ireland, and at a time, too, when Fenianism was rife in many men's minds. Happily, we have been spared the scenes which would have followed; and heartily, therefore, may we congratulate the Government on the success which has followed the adoption of its exterminating measures.

It may here be remarked that the process of quickly destroying the germ of the disease, wherever it may appear, has proved equally successful in Belgium. This country, after enjoying an immunity from the cattle plague for a period of fifty years, at which time it followed the track of the Russian and Austrian armies, received the malady from Holland in August of last year. The imports from Holland were at the time larger than ordinary, and it is known that some diseased beasts, supposed to have come from Rotterdam market, entered Belgium on August 16th. The disease gained a footing in no less than six different provinces; notwithstanding which, the energy displayed by the Government, as soon as it had correct information on the subject, quickly succeeded in exterminating it with a loss of only 455 animals. The closure of the frontier against the importation of cattle and sheep, hides, &c., from Holland, and of the ports against English cattle, have since preserved Belgium free from the pest.

Contrast with these facts the vacillating policy of Holland, and the desire to treat the diseased cattle, and you have a result which may be rightly termed deplorable. In South Holland and Utrecht, in particular, the disease still prevails to an alarming extent, and not only has no diminution taken place in the number of weekly attacks, but a positive and alarming increase, since about the middle of the summer. The last official reports which we have seen give the total weekly attacks from June 30th as follows:

June 30th	335	Aug. 18th	1133
July 7th	597	„ 25th	1379
„ 14th	526	Sep. 1st	1643
„ 21st	776	„ 8th	1849
„ 28th	971	„ 15th	1940
Aug. 4th	989	„ 22nd	1928
„ 11th	1225		

The relative numbers in the three divisions of the country, from Sept. 15th to 22nd, are as follows:

South Holland	Utrecht	North Holland
681,	1202,	45,

being a material increase in each division.

With regard to the manner in which the disease was introduced into Holland, it is unnecessary here to repeat the particulars in detail. Sufficient to say, that its importation from England has never been denied, the cattle taking it being Dutch oxen which were returned to Rotterdam in consequence of not bringing a remunerative price in the London market.

To whatever country we look, it will be seen that attempts at cure are invariably associated with a keeping-up of the disease. The mischief thus done is often ruinous to individuals, as well as injurious to the wealth of the nation. The counties which have suffered most in England, and in which the disease still lingers, are those where encouragement has been given to treat infected animals, and where the local authority has been otherwise lax in enforcing the law.

Even now there are many advocates for treatment to be found. Indeed, it is to be feared that some practitioners are more solicitous in obtaining information relative to remedies than to investigate the laws that govern the spread of the malady, or the changes that are produced in the organism by the *materies morbi*.

Cheshire is a remarkable illustration of the truth of the remark that the loss is always in proportion to the attempts to keep alive plague-stricken animals. The official reports show that in this county no less than 23,766 cattle have been killed, diseased, and 4,689 healthy, while 32,729 have died; 3,147 are unaccounted for, and 8,053 are said to have have recovered. Great as is this loss, it is believed to be very far short of the real one. Ruin has been brought on a large number of farmers and others, and the effects on the whole county must be felt for many years to come. No less han £300,000 has to be borrowed to compensate the cattle-owners. This sum will have to be repaid in thirty years, and it has been calculated that it amounts to about twopence in the pound on all the rateable property of the county during the whole of this period. Many of the dairies cannot possibly be replaced, and it is evident that the farmers must be taught that to emerge from their difficulties they will have henceforth to look to other sources of income besides cheese-making.

The system of farming must be modified, the land thoroughly underdrained, and Cheshire become a cattle- and sheep-grazing county as well as a cheese-producing one.

With regard to the treatment of the plague, it is not a little remarkable that the plan which received most favour at the

hands of the public was one that emanated from a gentleman who had no medical knowledge. "Drowning men," it is said, "catch at straws;" and this adage was well illustrated by the readiness with which the treatment advised by Mr. Worms was adopted. It consisted chiefly of the exhibition of a mixture, compounded of onions, garlic, and assafœtida. Little was to be expected from this odoriferous compound, except perhaps that which really did take place—namely, a rise of £1 per ton in the price of onions, and a scarcity of assafœtida in the drug market. A more modern remedy is chloroform, which, like every other, has found favour with some persons. Our experience of it is anything but favorable; nor can we see how such an agent can act beneficially in the destruction of the cattle-plague poison. If any therapeutic agents were likely to prove of use in such a way, it was to be expected that the sulphites might; but these, like everything else, failed completely when used on a large scale.

Neither time nor the occasion will, however, allow of my dwelling on the treatment of cattle plague, and I might at once dismiss the subject altogether; but it appears to me that reference should be made to one system at least which was adopted as a preventive—I allude to vaccination.

The system had its origin in the belief that cattle plague was not only an exanthematous affection, but closely allied, if not identical with, variola. This view having had its origin with some distinguished members of the medical profession, soon found favour with the public, and vaccination was at once seized upon with an avidity that would have done honour to a better cause. The great demand for vaccine lymph led pretty soon to the manufacture of a spurious fluid by a class of persons ever ready to trade on public credulity. Points charged with a compound of collodion and croton oil, or some similar irritant, were sold by the gross, and more than one person in London is said to have profited largely by the transaction. The Northwich hundred of Cheshire was likewise made the site of the nefarious practice of two persons, who travelled throughout it, carrying an irritating mixture in quart bottles, with which to "vaccinate" cattle. It is said that these men operated upon a thousand animals at least, making large incisions on the lower parts of the neck or shoulder, and wetting the wound with the fluid. In several instances the plague showed itself in about eight days afterwards, and its outbreak was believed to depend on these persons visiting diseased

and healthy stock indiscriminately. The charge made by them was two shillings and sixpence per head, so that the sum netted was very considerable.

No doubt, however, that a very large number of cattle were properly vaccinated; and as so many applications for lymph were made, it was found absolutely necessary for the national vaccine establishments to refuse all comers. Five shillings for a well-charged point was given in many instances, and as much as a guinea a head is said to have been paid for legitimate vaccination.

The vaccination mania, no doubt, largely contributed to the spread of the plague.

Three causes for this were especially brought into operation:

1st. A fancied security in the mind of the cattle owner;

2ndly. The totally unprotected state of even properly vaccinated cattle; and

3rdly. The positive inoculation of animals with cattle-plague virus, many persons acting under the belief that this was vaccinating them.

Strange as it may appear, some country surgeons, among others, were found to speak of the artificial introduction of the virus of cattle plague as vaccination. Coming from a cow, they seemed to think that it must necessarily have some of the properties of vaccine lymph, and as the use of this on the human subject was a security against smallpox, so the cattle-plague virus, they believed, would give equal immunity to cattle without in any way endangering their lives. Without commenting on ignorance of this kind, I may observe that it was hoped that the important questions of the susceptibility of cattle to the action of humanised vaccine lymph, and the effects which would be produced upon its quality, would have been solved by the experiments. For this and other allied purposes connected with vaccination, a circular was prepared by the Cattle Plague Department, and forwarded to each inspector, who was also a member of the profession. The questions asked were—

1st. The number of animals vaccinated.

2ndly. The number successfully vaccinated.

3rdly. The source whence the lymph was obtained.

4thly. The number *re*-vaccinated; and

5thly. The number in which vaccination failed altogether.

A very large number of returns were received, and an attempt was made to classify the answers, so as to take only those of value.

This, however, may be said to have failed to rightly determine the matter; but, taking the cases most to be depended upon, it appears that out of 7,692 animals 4,188 were successfully vaccinated, and 1,775 resisted the influence of the vaccine lymph entirely. The figures here given, leave unaccounted for 1729 animals. The return from Cheshire, like most other things connected with the cattle plague, was unique of its kind; it stated that 28,213 animals had been vaccinated; 22,564 before the appearance of cattle plague, and 5,649 after a declaration of the symptoms. These figures are sufficient to show the extent of the delusion which possessed the minds of the farmers in that ill-fated county, apart from anything else which has been advanced in this address.

It will be seen that no correct deductions can be made from the inquiry, and that the questions of susceptibility, the advantages or otherwise of retro-vaccination, remain very much in the same state in which they were prior to the cattle-vaccination mania.

I come now to a matter of considerable importance, both in itself and as affecting the continuance of the cattle plague—namely, the liability of other animals to this disease. That the poison is inert when introduced into the system of man and many of the domesticated animals we have abundant proofs, but that goats and sheep are highly susceptible to its influence has been established beyond all doubt. Only a few weeks after the importation of cattle plague five goats belonging to a dairyman in Islington died under circumstances which rendered it very probable that they had contracted the disease from plague-stricken cattle. These cases were quickly followed by others, and goat after goat come into the College suffering from the malady. Towards the end of September, 1865, intelligence reached us that some sheep in Norfolk were dying from a disease, the symptoms of which were strongly allied to cattle plague. The case was investigated, and left no doubt whatever as to the nature of the disease. Case followed upon case, until the question assumed a national importance. Such has been the progress of the disease among sheep, that the officially reported cases now amount to 6,826. This number, however, falls very far short of the real one, and I have no hesitation in saying that many hundreds would have been added to it if the matter had from the beginning been properly dealt with. By way of

illustrating the mischief done by diseased sheep, I select the following from many similar instances.

Some sheep which had contracted cattle plague were unwittingly sold by a farmer in Suffolk. They were sent from his place to Bury St. Edmunds, and were here divided into two lots. One lot went into the neighbourhood, and, carrying the disease with them, destroyed a considerable number of valuable sheep belonging to a large farmer, and two small lots belonging to two different persons. A lamb also, belonging to one of the ewes of the original lot, caused the destruction of fourteen cows and heifers, from being taken into a premises distant about seven miles at the time it was suffering from the plague.

The other division of the sheep came into Essex, and led to no less than four distinct outbreaks of plague—three among sheep and one in cattle. One of these outbreaks took place in Essex, two in Kent, and one in Middlesex.

Facts like these are answerable by those who deny the liability of sheep to cattle plague, and even unsupported by any others they would justify the course adopted by the Government in closing the fairs and markets, and restricting the movements of sheep in eleven counties of England. As I have elsewhere said, we could afford to smile at the pretended knowledge of farmers and sheep-owners which has given origin to the statements that sheep are unsusceptible of plague, were it not for the mischief it has produced. A grave responsibility rests with these men, for many outbreaks of the plague have been found to depend on the malady being contracted from diseased sheep. It is incumbent on the veterinary profession to show to farmers that, however perfect their education as tillers of the soil may be—however great their knowledge of the various breeds of cattle, sheep, and pigs, for feeding or stock purposes, they are nevertheless totally incompetent to give correct opinions of the nature or treatment of disease. The art of breeding, rearing, and feeding animals has not necessarily any more relation to the science of pathology than the art of cultivating the soil has with the knowledge of its geological epoch. It is said that farmers should be chemists, mineralogists, geologists, zoologists, naturalists, botanists, veterinary pathologists, and mechanical engineers; but let us remember that, however desirable such a state of things may be, they are, as a class, ignorant of these sciences, being simply farmers—producers of food for the people. We have heard also a good deal

from some of these persons respecting the practical knowledge of shepherds. Men, they say, who have been among sheep during their whole lives must know all about their diseases. This is a fatal mistake, for if there can be found one class more ignorant or prejudiced than another, it is that of shepherds. I say this advisedly, having now had many years' experience of them. In truth, it is their want of knowledge which greatly augments the farmers' loss of sheep from common causes. In matters of disease affecting sheep, shepherds should be taught that their duty to their masters consists in receiving, not in objecting to, the veterinary surgeon's opinion. The remark of a certain noble Scotch lady to her English shepherd—"You are a man among sheep, but a sheep among men"—applies with equal truth to the whole class.

Besides the dangers to which I have alluded for keeping up cattle plague, there is the further one of its reintroduction from the Continent. Holland, as has been shown, is at this moment a great pest-house; and although our ports are closed against Dutch cattle and sheep, there is, nevertheless, such an organized system existing in the cattle trade, that a risk is continually being run of animals from Holland finding their way to the metropolitan and other markets. Nor is it improbable that the disease may reach us from other sources, as it would appear that one of the results of the late war has been to introduce the plague into some parts of Germany. When we look at the network of railways which now exist on the Continent, and the facilities for bringing animals from such distant places as Hungary, Austria, and even Russia herself, we may well tremble for the safety of our English cattle and sheep. The great demand for animal food in this country, and the high price at which it is sold, will always stimulate commercial enterprise to push its ramifications to the greatest extent. Indeed, it would appear in our day that commerce knows no limits. Certain precautions, however, may be adopted by which the supply of foreign stock may be preserved, and a fair amount of security afforded against the introduction of contagious disease.

One thing above all others is to exclude store stock, or, in other words, to make it imperative that every animal imported shall be killed for the meat market. Individually, I am strongly opposed to the establishment of a quarantine for store cattle and sheep. Practically, it cannot be carried out with the large

numbers we are accustomed to import. Besides which, these quarantine stations would become pest houses, centres from which infection would spread far and wide. The right way would be to establish a live market at each place of importation, that a fair competition might take place between buyers, and the sender thus obtain the full value of his animals. After the sale, however, none should be allowed to leave the place alive; and to meet this requirement slaughter-houses and lairs should be attached to every such market. The slaughter of every animal should also be enforced within a limited time of its arrival at the place of importation. Much more might be added on so important a subject as the introduction of contagious diseases from the Continent, which has, in fact, now assumed such a proportion as to call for an entire revision of the importation law. Time, however, will not permit of any additional observations on this subject, and therefore I pass to the more immediate object I have in view.

Another contagious disease, nevertheless, first demands a passing remark, in consequence of the frequency of its recent outbreaks. I allude to the smallpox of sheep. It is a circumstance of no small significance, as showing the increased danger to our flocks as well as our herds from imported contagious diseases, that this malady has been ascertained to have broken out no less than eleven times during the present year. The first of these cases occurred in Northamptonshire; and although the flock with which the diseased foreign sheep came in contact was not large, still the whole of it was sacrificed, the unattacked as well as the attacked animals being killed. The second, third, and fourth outbreaks were in Essex, and were confined nearly to foreign sheep, very few of the English sheep exposed to the infection contracting the malady. The fifth likewise took place in Essex exclusively among foreign sheep. Besides these, during the last fortnight I have learned, from personal inspection, that the malady has been introduced into no less than six places in Cheshire, thus bringing another serious evil upon that ill-fated county. It is much to be feared that the extent of the disaster has not yet been fully ascertained, as it is well known that many thousands of foreign sheep have been sent there and elsewhere for feeding on the pastures which had been emptied by the cattle plague. Numerous as the cases of smallpox have been, there cannot be a doubt but they would have been greatly added to had it not been

for the vigilance displayed on a recent occasion by the inspector at the port of Harwich. Only a fortnight since, a vessel—the "Zealous"—came into Harwich from Antwerp, having on board 1369 sheep consigned to different importers. On examining the animals, by turning up each sheep, Mr. Taylor, the inspector, found that no less than 87 of them were affected with variola. The whole cargo was detained, and two days afterwards seven more cases were detected. On the third day Professor Brown went to Harwich, and on re-examining the sheep he found 9 others in the first stage of the malady, and 5 which presented pits. This brought the total number of cases to 108. It is worthy of remark that these sheep were all consigned to one person, and were part of a lot of 300. All the diseased animals were killed and buried, and the rest of the cargo was slaughtered for the meat-market, the skins being detained and disinfected.

Since this, two other cargoes of sheep have been detained at the same port, that the true condition of the animals may be ascertained. Besides this the landing place has been declared "infected," so that for the present, at least, no more smallpox sheep can be imported at Harwich.

In an address of this kind it should be the aim of the lecturer to avoid as much as possible questions of a debatable nature, and especially to eschew professional politics. As a matter of history, however, events, pregnant with good or evil, ought to be recorded, although they may closely intrude upon forbidden ground. As most of you are aware, an effort was made during the late parliamentary session to obtain legislative recognition of our profession, which to some extent was successful. In the words of the Bill,

"Any person, not being a member of the said Royal College of Veterinary Surgeons, who shall after the time appointed for this Act coming into operation, take or use the name or title of Veterinary Surgeon, or who shall falsely represent himself to be a member of the said College, or who shall use any other name or title with intent to lead, or whereby the public may be led to believe that he is a member of the said Royal College of Veterinary Surgeons, shall, upon a summary conviction for any and every such offence, pay a sum not exceeding *five pounds* nor less than two pounds.

"Provided, nevertheless, That this Act shall not affect any person who shall have assumed the name or title of Veterinary Surgeon prior to *six months* previous to the passing of this Act."

The Bill passed its second reading, and but for the opposition which it encountered in its further stages from our northern brethren in particular it would most likely have become law. I say nothing of the policy of this opposition; but, in common with many others, I regret it. England by it is still made to stand behind most of continental Europe as to the position of her veterinary professors. Had the profession been ten times as numerous as it is, we could have afforded to have yielded the point for which the opponents contended, and have seen another Royal College of Veterinary Surgeons established in Scotland. Indeed, I believe that I only utter the sentiments of the profession, when I say that England would have been equally as desirous for this as Scotland herself. The Royal College of Veterinary Surgeons should not be misrepresented. It seeks only the general advancement of the profession, and it desires to rule, not with autocratic, but with parental power. None will doubt that a value belongs to legislative recognition; but many, perhaps, will attach far greater importance to legislative protection. Notwithstanding this, let us bear in mind that public appreciation of our services as men of science ought to be as earnestly sought for, as either legislative recognition, or legislative protection. It has been well said that men cannot be made honest by Act of Parliament; and, we may add, neither can they be made wise. Wisdom cometh not of protection, but of perseverance and experience. Let our resolves be right, and our scientific attainments equal to all demands, and our position will become so steadfast that it may be truly said we can dispense with all legal props.

But to proceed, I have now to point out to you, students, the nature of your studies, and the facilities which this institution affords for acquiring a knowledge of the science of veterinary medicine. It is the freshmen who require to be informed that their studies will embrace investigations of the structure of domestic animals, the uses of the several parts of the organism, the changes to which they are exposed by diverted action, the means by which this is to be subdued, the history of the agents employed for the purpose, together with their composition, properties, effects, doses, &c. Besides these things, each will have to make himself master of the principles of surgery, and the method of performing operations, as well as with the several collateral branches of science, which have a greater or less bearing on his professional education.

Anatomy is truly said to form the basis of the fabric which has to be reared. Without this foundation to rest upon, the whole superstructure of medical knowledge is in danger of falling. It is impossible to speak too strongly of the importance of anatomy, and of the necessity which exists for you to devote a considerable portion of your time to its investigation. It is in the dissecting-room alone where such knowledge can be rightly obtained, and the facilities which are afforded in this respect to the veterinary student contrast strongly with the difficulties which beset the progress of the student of human medicine. Our subjects are comparatively of trifling value, and easily obtained. They can likewise be brought to the table with their organism unchanged by the inroads of disease or by natural death. These privileges are, however, not to be abused.

I am induced to allude the more particularly to this, because great waste often takes place in the dissecting-room, and many a subject is removed while yet useful for important purposes. Another reason also is, that sufficient care is frequently not exercised in dissection; parts are literally cut up instead of being properly separated, the one from the other, for further study. There is no place where order, silence, and decorum should be more observed than in the dissecting-room; noise and confusion are incompatible with the researches there to be made, they neutralise your own labours, and give offence to those who superintend your studies.

Remember that dissections have for their object a practical acquaintance with the several component parts of the animal body, the relation which they bear to each other, and the harmony which exists in the whole. No written descriptions, however graphic, nor demonstrations, nor pictorial illustrations, notwithstanding their value as aids, can supply this knowledge. By dissection organisation is made plain. The whole frame is seen to be fitly and aptly put together, everywhere giving evidence of the wisdom and design of the great Creator, in whom "we live, and move, and have our being." A practical anatomist also possesses an immense advantage; he will never be at a loss on emergencies, and will be enabled to maintain a calm and collected mind during the most critical operations.

We are accustomed in this institution to take the horse as a standard of comparative anatomy, and there are many practical advantages arising therefrom. It is nevertheless much to be re-

gretted that there is no work which especially treats of the anatomy of domesticated animals, although England can boast of as great and erudite comparative anatomists as any country in the world. Many of them are, however, for the reason we have named, and also from the circumstance that their investigations are confined to the lower forms of animal life, but very imperfectly acquainted with the details of the organisation of domesticated animals. In this institution your teachers endeavour to supply this want as best they can, which is, however, only imperfect after all.

Besides the primary division of anatomy into *human* and *comparative*, the science is subdivided into *descriptive* anatomy, which treats of the form, shape, &c., of the different organs, and the relation they bear to each other; and *general* anatomy, which recognises the structure and physical nature of the tissues composing the organs. These divisions have special reference to an animal body when in health; but as, by disease, changes are wrought both in the form, composition, and physical condition of the organs, so you will have to give attention to abnormal or morbid anatomy, called also pathological anatomy. From what has been observed, it is evident that no advance can be made in the latter until the former is thoroughly understood, for you must necessarily fail to recognise a change in a part, if you are unacquainted with its normal condition. A knowledge of anatomy then lies at the basis of all advancement in the healing art, and it is this knowledge which marks the difference between the man of science and the charlatan. One is master of numberless details relating to his profession, which the other is entirely ignorant of. One is guided by precise and fixed laws, while the proceedings of the other are as erratic as a wandering star.

Closely allied to anatomy is the external conformation of animals as indicative or otherwise of their capabilities to undergo exertion, withstand the ordinary causes of disease, or quickly accumulate flesh and fat from relatively a small quantity of food.

The anatomist knows full well that external conformation is but the index of external development; that a capacious chest, for example, must contain large lungs and heart.

The most profound anatomist, however, as such, would know but little of the uses of the several component parts of the body. For example, the structure of the liver does not reveal that it is destined to form bile, nor the kidneys that their office is to

secrete urine. The science which unveils these hidden mysteries is physiology, and it therefore constitutes an important element of your studies.

Physiology has to do with a *living organism*, and to a great extent it must therefore be learned from the writings of the best authors, conjoined with the expositions of your teachers. It is, perhaps, the most inviting of all sciences; for, while some of its laws are fixed and certain and easy of comprehension, others allow of the greatest range of the human intellect for their solution.

So much of what we may be permitted to call commonplace physiology, it is right that you should become *early* acquainted with; but you must be careful to avoid the study of the abstruse points of the science until you have made considerable progress in anatomy and general chemistry. For instance, all should know at once that it is the office of the stomach to digest the food—of the liver to form the bile—of the heart and vessels to circulate the blood—of the lungs to support the breathing—and, indeed, be familiar with the ordinary functions of every portion of the frame; but the way in which these several offices are performed, and the part that life or organic chemistry takes in their production, must be left for advanced study.

I come next to chemistry, as the science which unfolds many physiological phenomena. This is, indeed, a study of the greatest importance to you. By observing that an animal body is composed of a few simple elements, of which it is the sole property of chemistry to demonstrate the properties of, we at once set forth the value of the science as applied to physiology, and even pathology. It has been the custom to speak of organic chemistry as a special branch of this science, from its application to the purpose alluded to. Doubtless its value will appear yet more and more; but some, we fear, in their search after knowledge, are too apt to lose sight of the operations of the vital force as a controller of chemical action. "It is a great thing," writes a distinguished member of the medical profession, "to be able, by the aid of organic chemistry, to trace each act of the metamorphoses which the materials of the body are continually passing through; to be able precisely to define what becomes of the saccharine and fatty principles of the food; to be able to follow the albuminoid matters, the phosphorus, the earthy, alkaline, and metallic salts; to have a clear perception to what par-

ticular class of organs they go; how they are used up in the production of different kinds of force, or in the formation of various secretions; and, finally, to find in the very *débris* and excreta of the body the sure and certain measure of the vital action itself."

With reference to the bearing of chemistry on pathology, it may be here asked, what did we know of the nature or treatment of tympanitis until this instructive and ennobling science came to our aid? It developed the important fact, that the gases eliminated in this disease differ according to its duration. That in the early stages carbonic acid is present, while in the latter carburetted and sulphuretted hydrogen exist. But it did even more than this, for it pointed to a safe and efficacious means of neutralising and decomposing these gases, so that now the practitioner is enabled successfully to combat this hitherto fatal malady. He puts in operation, in either case, a well-known chemical law by exhibiting the compounds of ammonia in the early stages of the malady and those of chlorine in the latter.

Nothing has done so much for the improvement of the modern veterinary surgeon as his knowledge of chemistry. Without it he was yet ignorant of many of the functions of the body in health—of the changes wrought by disease—of the means to satisfy himself that death arose from natural causes—of the composition, properties, and even doses of the agents he employed; in fine, deprived of this knowledge, he could not be considered a safe and sure pathologist. Chemistry will of necessity make a great demand on your time; but if this is rightly economised, it need not interfere with your other duties. The truths of the science are so captivating, its phenomena so striking and beautiful, and its results so important, that the danger often is that pupils will be eager to dive into its subtilties before they are proficient in its elements. You require, then, the same caution here as has just been given with reference to your study of physiology.

Connected with chemistry, as collateral branches, are *materia medica* and therapeutics—sciences which treat of the agents and the manner of employing them in combating disease—and which in due course must also have their proper share of attention.

With reference to therapeutics, and their bearing on pathology it is necessary to observe that it is to the principles of treating disease that your attention has to be given, not to the mere exhi-

bition of medicines. Therapeutic agents used without judgment often augment the very affection they are intended to relieve. Some of you may have come here from the country well stored, as you believe, with a long list of remedies for particular diseases. Throw these to the moles and the bats. Earnestly apply yourselves to the *science* of medicine, and then you will never be at a loss as to what to do, or what to give. If you desire to be men of science, veterinary surgeons in the strict meaning of the term, you must do this. If charlatans, men of mere routine, then retain your bundle of receipts, and take your place among that nearly extinct class of illiterate farriers and cow-leeches.

Upon such foundations as anatomy, physiology, and chemistry, has to be raised the top stone of the building, pathology. The principles of this important part of medical science will be taught you in the lecture-room, but the application of these has to be acquired in the infirmary, and perfected in the country, after you have ceased to be pupils of this institution. Indeed, to excel in "the art of treating disease," you must continue *students* to the close of your professional career. While here, you will but begin that system of observation and reflection upon the ever varying phenomena of abnormal action present in the several stages, types, and forms of disease, which time and experience will have to perfect. See, then, the necessity as well as the importance of cultivating a habit of analysing the symptoms of disease, and the attention that must be given to the clinical remarks of your teachers. In studying pathology you must note the phenomena that the functions of the body present when diverted from their usual course by the intervention of disturbing causes, and examine the alterations of structure which accompany such deviations. From the ever varying causes of disease, pathology may be said to be constantly being learned, but never fully acquired; and hence the value of experience, which time alone can give, in deciding on the nature of doubtful or difficult cases. The steps by which you are to begin the ascent to this temple of fame must be securely laid, for none other will conduct you safely thither.

"Without a scientific knowledge of the principles and laws which preside over the natural operations of the living body," writes an eminent surgeon, "you cannot be said to understand, even vaguely, the nature of the derangements of disease; and without a scientific insight into morbid conditions it will be impossible to adapt your treatment skilfully to the varieties which

they manifest, or to be other than the slaves of empirical rules, blindly applying the same remedies under circumstances wholly different, and constantly at a loss when new phenomena unexpectedly present themselves." You need scarcely to be told that your success in after life will mainly depend on the practical results that arise from your skill in the treatment of disease. Reason, as one of the mental faculties, should guide your proceedings; for all these rightly cultivated tend to perfection. It is instinct alone which never changes. Birds build their nests and bees their cells now as they did when they were created; but reason, at however great disadvantage from the influence of custom and prejudice, is a principle of change, and if you appeal with confidence to it, your appeal must ultimately succeed. Of all the means to acquire a knowledge of the treatment of disease none can compare to hospital practice. You must be equally strict, then, in your attendance to this as to the lectures, for it is in the yard and stables of the institution where you will see daily brought into operation those principles which have been inculcated in the lecture-room.

It is also in your daily rounds of the infirmary that you will become practically acquainted with the examination of horses for soundness upon purchase. Practically considered, there are few things of more importance than this. Upon the correctness of your judgment more will often depend than you at the time can contemplate. Disputes may arise, litigation follow, and you be called upon to vindicate your opinion in a court of law, where perchance you may find yourself opposed by one better versed in the nature of disease, and thus, by the evidence he gives, you may have to bear the stigma of disgrace as well as defeat; or, on the other hand, by your knowledge of the subject you may successfully oppose conflicting evidence, and win for yourself an honorable and lasting reputation.

Next to the daily watching of cases of disease, noting the progress, change, or alleviation of the symptoms, nothing will tend so much to the advancement of your knowledge of pathology as the making of *post-mortem* examinations. Pathological anatomy unveils things which had been shrouded in mystery, and brings to the clear light of vision that which had been only obscurely discerned. This science, as previously stated, holds in relation to disease the same connection as normal anatomy does to the understanding of the structure of the body.

As veterinary surgeons, we here stand on vantage-ground. Few objections are ever made to our *post-mortem* examinations, indeed they are not infrequently insisted upon as tests of the value of the diagnosis.

The knowledge thus gained is indelibly fixed upon the mind; and the more it is reflected upon in relation to the symptoms, the more valuable it becomes. As a future guide, it is of the utmost worth; for it will guard you in great measure against the temptation of expressing too freely an opinion at first sight of the nature of a disease. *Post-mortem* examinations are by some veterinary surgeons too much neglected, being instituted only in rare and unusual cases. This is an error akin to that of watching such cases only, and disregarding the information which is to be obtained from the more common forms of disease. "Every case, indeed, if well observed, will yield instruction—this for its rarity, that for its frequency."

Until in your *post-mortem* examinations you are able almost at a glance to separate the real from the accidental, the true from the false, the essential from the non-essential, you can lay but little claim to the title of being a morbid anatomist. How often it is that passive congestion is confounded with active; hyperæmia with inflammation; induration with hepatization; acute disease with chronic; ordinary with special change; the action of medicine with the lesions produced by disease, the changes resulting from decomposition with those wrought during life, they alone can say who have made themselves masters of morbid anatomy. These are grave errors, leading to much which is wrong both in principle and practice. I fear that even as a profession we have too much neglected this branch of science. Often have we jumped to conclusions the very opposite of those which are true. It requires a strong mind to resist a preconceived notion from exercising more than its proper share of influence. Too often are we led by opinion rather than by evidence. Speaking figuratively, the same kind of knowledge which the agriculturist brings to bear in distinguishing one variety of wheat or other grain from another, the genuine from the spurious sample, must be possessed by him who undertakes to describe the morbid changes of the tissues of the body, be they of a special or common nature.

Hereafter it may be, that morbid anatomy shall form a special branch of the pupil's study. Come that time when it may, it

must be associated with microscopic demonstrations, or it will be but the shadow of the thing hoped for.

These remarks necessarily lead me to make a few observations on the modern achromatic microscope, an instrument which some who style themselves pathologists even now profess to condemn. We are alone enabled by the employment of this instrument to clearly comprehend many things which before were enigmatical. Digestion, secretion, nutrition, absorption, and other vital functions, no longer rest on mere hypotheses for their explanation. The microscope may be said to have disclosed, in so many instances, the intimate structure of the organs concerned in these processes, and to have shown that organisation is altogether independent of vascularity; that the vessels are but the conveyers of the raw material, as it were, in the form of fluid blood, and that nutrition, secretion, &c., depend on the law of endosmosmic action and cell-formation. By this instrument it may be said that we possess, as it were, another sense, for the sense of seeing becomes so vastly increased and extended, that our minds are opened for the reception of facts of which previously we had scarcely a conception. It reveals to us a hidden, because otherwise an invisible world of wonders, so that it is almost impossible to calculate the advantages which the arts as well as the sciences will ultimately derive from its use. Its value to medical science is incontestably shown by the circumstances that not a school or hospital can be found in this vast metropolis where the microscope is not employed for investigations, anatomical and pathological. Some also who have grown gray-headed in the medical profession have not only shown their appreciation of the instrument by employing it themselves, but have done their best to introduce it to the notice of others. Microscopic investigations may be said to have gone further towards the elucidation of physiological truths than even organic chemistry. Nor does the instrument stand second to any other means in the study of anatomy. No dissection, however minute, is at all to be compared in beauty or delicacy to well-prepared microscopic sections or injections. Besides, it has this advantage, that while it enlarges our ideas, it so simplifies everything, that the commonest understanding can readily imbibe the greatest truths.

I cannot understand therefore how any man can be either an anatomist, physiologist, or pathologist, unless he avails himself of the constant use of the microscope. I care little for his expe-

rience, for this cannot be said to have any real foundation to rest upon.

While students, then, cultivate investigations of this kind; great facilities are now offered for this, as really good instruments can be procured at comparatively little cost.

Thus far have I endeavoured to give you an outline of veterinary science and its collateral branches, and it must long since have been evident that a division of labour is not only required, but that each of your teachers has enough to do in his particular department.

The imparting of information by the delivery of lectures has long taken precedence of all other methods of instruction in science. It is the most inviting, as also the most ready means of impressing the mind with the truths it has to acquire. Like all other good things, however, the system has its alloy. Too much dependence is often placed upon the teacher by the pupils, who will thus become indolent in seeking further knowledge by reading and investigation. While, therefore, it is the province of the teacher to seize upon the rallying points of his subject, to separate the valuable from the useless; it is no less the duty of the student to make the matter his own, and by subsequent research to complete his knowledge respecting it. In this way alone can your minds be stored with information, which is hereafter to be applied to your own benefit as well as to the advantage of those you are looking to for support. Nor must you omit to be regular in your attendance at the lectures. An occasional absentee differs but little from him who designedly neglects to be present. He has lost, perhaps, the very thing he was solicitous about; or he has missed the practical application of principles he had heard previously expounded.

Another great error is that of pupils deciding for themselves what is important and what is not; and thus by studiously avoiding first one thing, and then another, they find at last they have made shipwreck of their talents and also of their time. Talent without perseverance is of little worth. It is the diligent pupil who, early and late, is to be found in his place; who plods on day by day; who receives the inculcations of his teachers in a right spirit, and who has determined to gain the honour he has come to seek—that of being a graduated member of his profession—who will be sure to succeed. Let me, then, entreat you one and all to persevere, to impose activity upon yourselves as a

positive rule and duty, to be punctual and regular in your attendance, and to allow nothing to induce you to give up even a single lecture.

Besides dissections, attendance on the lectures, and hospital practice, another excellent means of obtaining knowledge, is the Veterinary Medical Association. At its weekly meetings, papers are read and discussed, morbid specimens exhibited, and the treatment of disease criticised. As the society is based on the mutual instruction system, so, when its debates are rightly conducted, it cannot fail of being everything the professors desire it should be for your improvement. It has been said that "reading makes a full man, writing a correct man, and speaking a ready man;" and as in this society all these essentials are brought into active exercise, so it must ever hold an important place among the auxiliaries to your studies. You will do well, therefore, to become members of the society, and by it contribute your portion to the general fund of veterinary knowledge.

Connected with the society is a most valuable library, of both old and modern authors. These works, subject to certain regulations, are circulated among the members, affording them every facility of storing their minds with the special as well as general literature of medical and veterinary science.

Having thus spoken of the present state of the profession, with its duties and prospects, I would, in closing, make a few more observations, chiefly exhortative.

In all around us, at the present day, we have proofs of mind-progress; its culture, therefore, becomes imperative on the part of the aspirant for knowledge. It has been well remarked that "no man liveth to himself, and no man dieth to himself." Each has his sphere of usefulness. Man has a mind to be ennobled by the acquirement of knowledge or debased by ignorance; and in proportion as the former is cultivated, so will the soul—his nobler part—be elevated. Every student should remember that according to his industry, so will be his profit—as he sows, so shall he reap. The mind has been called the crown and summit of nature, and its full development has been said to be dependent on the teachings and results of the lower sciences.

Some of you may be inclined to say, "I feel my abilities are not equal to the task assigned me; I fear my powers of mind cannot take in all that is required." Such I urge never to think of failure, far less to despair of success. Always act upon the

maxim of the woodman—"If the axe be blunt, and its edge is not whetted, then must more strength be put forth." Dissatisfaction with our attainments is an omen for good. It excites a yearning for something nobler and better, and thus becomes an incentive to industry and consequent advancement. If satisfied with what we have attained, should we not rest contented and make no further effort? And would not this be an evil? Self-sufficiency is always a barrier to all further acquirement, like a vessel that is full can hold no more. No mere man has ever reached, or ever will reach, the pinnacle of human knowledge. There is a height beyond all his powers of thought—"a path the vulture's eye has not seen"—some road of truth not yet explored, and many problems not yet solved. An uncultivated mind, however, is like the barren waste, where unheeded spring up thorns and briars, or at best the almost worthless furze. There can be no doubt that that kind of work is most healthy which calls for the exercise of much thought; and yet brain-work is very exhaustive, arising from the well-known sympathy of the body with the mind: hence the benefit derived from the varying of your studies. Few will be inclined to deny the statement, that intelligent labour, such as necessitates thought and care, a cunning hand and an attentive mind, acts as a tonic to the worker. He is the better for the unconscious self-discipline and healthy stimulus which his employment affords him. On the other hand, that toil which requires no mental exercise—mere rough drudgery that a machine or a brute could do better than man—has a tendency to coarsen and debase him.

Some method should also be adopted by you in your studies. I have already adverted to varying them, so as to prevent tedium and awaken a fresh or new excitement in the mind; for brain-power is too rare and too valuable to be allowed to run waste. In addition I would say, Keep your note-book always at hand. You are not aware how much you may gain by recording from time to time the information that may be, as it were, casually dropped, and how much mental power it saves you; all of which would be lost were it not for this. "A methodised industry," says a well-known writer, "that shall give employment to the faculties steadily from day to day, is one of the most civilising and one of the most moralising of all the influences that can be brought to bear on man.

Next to an earnest attention to the instructions of your teachers, I would place reading. Read sedulously; but, at the same time, give all thought and attention to what you read, and, if needs be, make notes thereof. Comparatively few think for themselves. It has been averred that for every ten persons who think, there are exactly ninety who do not think. How these relative proportions have been arrived at, I do not pretend to know, but possibly the disproportion may be still greater. This might be considered censorious. Still I am inclined to believe that most of us are too much like sheep who contentedly follow the wether, and should he jump over some imaginary obstacle, all to do the same. Now, this arises either from a love of ease, or the mind not having been correctly disciplined in early life.

The aphorisms of Confucius carry with them wisdom. He says, "The more our talents are employed, the more they will be developed." "If something be not added to our knowledge every time a book is read, we read in vain." "To strive is man's part; to accomplish is Heaven's." It has been stated of one of the most learned and most useful of our great men, Lord Brougham, that he never goes to bed before he has ascertained that during the day he has acquired a new idea; and if on reflection he finds this not to be the case, he goes to his library, takes down a book, and reads till he finds one.

The books required for your present studies you will be by others informed of. But hereafter you will require still to read—a love of which we would inculcate.

> "'Tis to the press and pen we mortals owe
> All that we learn, and almost all we know."

What companions they prove in solitude! What sources of information they become! They contain the fruit of the living brains of the mighty dead—the thoughts of those who have given themselves to the higher pursuits of knowledge: "They have gathered the manna, not for themselves alone, but for the working multitude, who may eat and grow intellectually strong—while it is theirs to think, and write, and publish, and give us the collected fruit of their labours in the form of books, it is from their works, as from so many golden goblets, that we are called to drink the pressed-out juice of riper thoughts. With a good book in our hand we should be in communion with the purest intellect and the most uplifted of our race—in contact with life

in its higher and nobler manifestations—and find that a well-informed mind brought with it its own purer satisfactions. There is a charm in books. They oftentimes act as a talisman and spell, and hold the reader unconsciously under their magic influence. 'Pindar beguiles the loneliness of Cowley, while Horace lulls asleep the cares of Sanderson, and the domestic miseries of Hooker.' . . . We are told Pliny was wont to conclude the day with a book, music, or an interlude. Rubens had his attendant to read to him out of some favourite author while he was painting. Milton spends a dark day by the fire with a book in hand, or with a friend at his side. Sunny and happy is that hearth where all are drawn in circle round the father's feet, to receive his loving smile, and to find in him a heart which can enter into all their delights and joys. Say what we will, every one must have his hours of recreation and amusement.

"We love companionship; and the man who has a good book can never be in want of a pleasant companion. It is a friend whose looks never alter, and in whose heart there are neither jealousies nor fears. There is no caprice to humour; there is no infirmity with which to bear; there is no falseness which makes the heart to bleed. It is a friend whose love can be neither chilled nor quenched, and which can never be warped either by interest or error. It is a friend whose communion may be enjoyed when we will, and whose constancy is the same to-day and for ever. A wholesome book not only withdraws the man from the grosser scenes and pursuits of earth, but takes him out of himself, out of his own littleness, and teaches him what he lacks, proffers him what he needs, corrects his folly, and opens to him the path of wisdom; promises to feed his famished mind, and reveal to him the hidden fountain of joy. Milton says: "As good almost kill a man, as kill a good book. Who kills a man, kills a reasonable creature, God's image; but he who destroys a good book, kills reason itself—kills the image of God, as it were, in the eye. Many a man lives a burden to the earth; but a good book is the precious life-blood of a master-spirit, embalmed and treasured up on purpose to a life beyond life.'"

Books then will be accepted as auxiliaries—useful aids which cannot be done without. The mind must be allowed to do its part, or all your reading will be in vain. We advocate not "wasting the midnight oil," for such we hold night study to some

extent to be. In the morning the intellect is clear, and the mind consequently more able to work with satisfaction, and to receive and retain impressions. Of course we here speak of the evening of the previous day having been spent in a rational and becoming way. All excesses must ever be avoided. You are in the pursuit of science, and to be won she must be wooed. Unless, then, you bring a mind free from all that contaminates and lessens its power, you will never make any advancement. Remember, it is Shakespeare who has said—

"It is the mind which makes the body rich."

Earnestnesss almost amounting to enthusiasm will be required of you. The present without controversy is an age of progress, and you must not allow your profession to lag behind. Commerce is uniting nations by an electric band; liberty, the handmaid of intelligence, asserts her rights, and science is extending her benefits on every side. She has been designated the friend of Art and the guide of industry, and assuredly she is both, since both receive from her invaluable aid; while much labour would be altogether thrown away were not her principles brought into operation. Thus it is that cultivated thought leads to practical skill, by the application of which man becomes exalted and the necessaries of life supplied. It has been truly said that "the progress of science has during this century outstripped all calculation. This generation has seen the world march onwards with giant strides on the path of civilisation, such as centuries of its former years have not witnessed. Science has subjected to her searching analysis the opinions and the credulities of mankind. She has made men give an account of the reason of their opinions; she has waged, and is still waging combat with the ignorance, the prejudices, and the thousand vain images which have so long kept and still keep the world from the clear vision of unclouded truth."

It will be yours to apply some of the principles to which I have been adverting to that division of science you are about to make your study. It has been said that it is based on empiricism, or on the belief and experience of individuals. Let it be yours to show that truths of a higher kind are now both its basis and its superstructure, and therefore that it is worthy of the support and the confidence of the public. On you rests much of the future as it respects veterinary science. All men are not destined

to become great men, and fill a niche in the temple of fame; yet each man has his niche to fill, and incentives should be given to the young to do so well. We are all capable of achieving something, of contributing, if it be but little, to the building of the temple, should it be only as hewers of wood and carriers of water. Emulate those who have gone before you, ever remembering that, attaining to what you may, there is still a higher point to be reached. You are not yet perfect, and must be contented still to labour. Students, remember, too, that such an event as we commemorate to-day forcibly reminds your teachers that the period is fast approaching when their places will have to be filled by others. Who can tell that, sitting on those benches, there may not be some who are hereafter to occupy our places? If this be so, it behoves one and all to be faithful to himself, that he may be faithful to his time and generation. To labour daily, hourly, to fit himself for that which lies before him.

It has been well observed that everything which is really worth possessing in this world is the result of toil—toil either of brain or muscle. Labour is the lot of all; yea, even of God himself; it is, therefore, God-like. Workman, let this cheer thee at thy bench, and thee, student, in thy study. Let no man shrink from honest work. We are, moreover, all of us, from the most eminent to the most obscure, learners day by day—fellow-students in the great amphitheatre of nature—fellow-travellers through the vast regions of truth unexplored; and happy will it be for all if each be permitted to bring but a single stone to the grand edifice which has devolved on our generation to build up.

Before concluding this address, there are three other things in particular on which I desire to offer a word of advice to you. They are—1st, to avoid idle companions; 2ndly, to abstain from strong drink; and, 3rdly, to abhor the use of profane expressions.

Some of you are now placed, and for the first time, in a state of comparative freedom and independence. Remember that this position is one of deep responsibility, big with future events; if used aright, it cannot fail to lead to happiness, and raise you in the social scale; if otherwise, it will as assuredly ruin your prospects, your health, and all that man should hold most dear. Be especially jealous, at this juncture, in the choice of companions—seek those that are above, rather than those that are beneath

you. "Show me the man's companions, and I will show you the man," is a proverb no less trite than true.

It is deeply to be regretted that this vast metropolis, amongst all the good, moral, and religious examples it possesses, contains, too, its thousand temptations to allure the young and unwary from the paths of rectitude and virtue. Avoid all these as quicksands placed in your course by him "who goeth about seeking whom he may devour."

The influence which the mind of one person exercises over another for good or evil has been dwelt upon by moral writers from the earliest days of civilisation. Notwithstanding this, it may be affirmed that we fail to understand the full amount of this influence. Every one knows the advantages arising from having some one to whom he can look up, and whom he can trust at all times; and it has been rightly said that the influence of association is so great that it brings us not only to the same modes of thought and speech, but in the closest relationship of life it leads even to the production of a similarity of features Avoid, then, not only improper companions, but seek even in your dress and manners to be none other than gentlemen. A great, and I fear a growing evil, among many young men is so to attire themselves that they may be supposed to have horse knowledge. As veterinary surgeons you must be horsemen, but ape not the groom. Be not, as it is said, "horsey" in appearance.

On the second point I remark that to be a drunkard does not require that a man should be seen reeling to and fro in the streets, like a ship at sea without a helm. Remember that he is a drunkard in principle who avails himself of every opportunity to take strong drink, who keeps himself under its influence, and who feels an inward longing after more, so soon as the effects are passing off. Such a man drowns his better feelings, and is often turned from the lamb into the wolf. If he be a man of talent, he is spoken of by all who know him with pity; if he be otherwise, his name is mentioned with contempt. Judge ye in this for yourselves.

On the third point I content myself by quoting the remarks of a popular writer, who labours earnestly to elevate his fellowman. Truly has he said that "an oath is but the wrath of a perturbed spirit, abusive to the mind which conceives it, to the tongue which utters it, and to the person at whom it is aimed. That it is *vulgar*, altogether too low for a decent man, and *cow-*

ardly, as implying a fear of not being believed or being obeyed. That it is *contemptible*, forfeiting the respect of all the wise and good, and that it is *venomous*, as showing a man's heart to be a nest of vipers, and that every time he swears one of them starts from his mouth." If, then, you desire to win the respect of all whose good opinion is worth possessing, and whose esteem cannot fail to strengthen your own social position, let your yea be yea, and your nay, nay.

And now, gentlemen, if you hearken to this advice, and never lose sight of the true and noble objects of your profession; if, in the language of a distinguished member of our sister science, "in your intercourse with your professional brethren, and with the public, you are ever guided by principles of honour and of candour, and by an abnegation of self-interest, you will live to be not only respected, but beloved by those who know you best, and will have the inward satisfaction of knowing that in the midst of all the trials, anxieties, and difficulties which beset your path, you are pursuing an honoured and useful career."

"Lives of great men all remind us,
We can make our lives sublime;
And, departing, leave behind us
Footprints, on the sands of Time."

REMARKS ON SOME OF THE DISEASES AFFECTING THE FACIAL REGION OF THE HORSE'S HEAD.

By Professor VARNELL, Royal Veterinary College, London.

(*Continued from p.* 768.)

IN compound fracture, as before stated, a portion of bone will protrude through the softer structures, thereby lacerating them; and they will also, through the force which broke the bone, be more or less contused.

In this condition of the lower jaw the fragments are more troublesome to adjust and their union less certain than is the case in simple fracture.

In endeavouring, in such instances, to place the segments of bone in their natural position, it may be necessary to

enlarge the opening in the skin before the protruded piece of bone can be returned to its proper place, or it may be even advisable to saw a portion of it off. This, however, I should always do if its surface was denuded to any extent of its periosteum, for a portion of bone so affected would most likely die, and, by acting as a foreign agent in the wound, would materially interfere with the process of reparation.

Having replaced the broken ends of the bone, and carefully ascertained that no loose piece, wholly detached from the main portion of the jaw, exists in the wound, the soft parts may be pressed together as evenly as possible around the opening, and some damp lint or cotton-wool placed over it, and secured by a narrow calico bandage. If this is carefully performed the fracture will be reduced in character almost to a simple one.

In applying this bandage it may be passed through the mouth under the tongue; but, in passing it across the tusks, holes may be made in it for those teeth to pass through, thereby rendering them of great service in securing the bandage from slipping. Over this a warm bran-and-linseed poultice may be placed, which should remain on for at least twenty-four hours, or longer if necessary. The poultice being removed and the parts thoroughly cleansed, the fracture should be carefully examined, to ascertain its condition; and if no displacement or other unfavorable circumstance prevent it, the bandage with splints or the *cradle* may be applied, as recommended for simple fracture.

In compound fracture of the lower jaw it may be advisable to cut a portion of the splints or cradle away opposite the seat of the fracture, so that the part can be explored and dressing applied, if necessary, without having to remove the apparatus from the jaw. This arrangement will also allow the matter, should any form, to drain away.

The horse should be allowed such food as will require no mastication, and if undue inflammatory action should arise it must be controlled by the use of laxatives and the application of cooling lotions to the part.

Comminuted Fracture of the same part of the Lower Jaw.

The intensity of the concussive force produced by a kick from another horse is sometimes so great as to shatter the bone into many pieces, without, it may be, penetrating the common integument.

As I have before indicated, such lesions are much more likely to occur in old horses than in young ones, even though the exciting cause is the same in both instances, and the

probability of a cure is also very much lessened. Nevertheless, even in such cases as these the practitioner should not wholly despair, providing all other circumstances are favorable, of effecting a cure. It must be expected, however, that deformity, as a result, will be greater than in simple or even compound fracture.

Again, the fracture may be both comminuted and compound in its nature; that is, the jaw may not only be broken into many pieces, but some portion of one or more of them may penetrate the skin. Such cases as these may appear very formidable, and certainly the chances of success are slight; still, if the horse is not too old, and his system is generally healthy and vigorous, we should not altogether give up the idea of effecting even a tolerably good cure.

A case like this must, without loss of time, be well considered; the mind's eye, as it were, must penetrate the shattered bone, and the relative position of the fragments one with the other, and with the inferior dental nerve, as far as possible determined. Upon examination some loose fragments of bone, wholly detached, may be discovered, and will require to be removed, or, as I have before stated, its presence may materially interfere with the well-doing of the case; but no fragment, however small, should be forced away, if only partially attached by its periosteal covering. The adjustment of the several pieces should be effected as early as possible after the occurrence of the fracture, for if neglected for any length of time the difficulty in doing so will be increased. The progress of the case should be carefully watched from day to day, but the parts must be disturbed as little as possible.

The case may appear to go on very well for a few days; but on an examination being made the practitioner may discover that an abscess is forming between the segments of the fractured bone. This phenomenon would, of course, be unfavorable, but not of necessity fatal, to a recovery.

Matter forming in this part may depend either upon the quantity or the quality, or upon both, of the material effused from the injured tissues or organs. The character of the matter may vary much; it may be light in colour, and of the usual consistence of pus; indeed, the greater part of it may be actually pus, which would be, under such circumstances, a favorable sign rather than otherwise. It may, on the other hand, be thin and watery, or it may possibly be thin, dark-coloured, and fetid; if the latter, it would indicate that death and disintegration of bone were going on, and the result desired very doubtful.

If it is found that an abscess has formed in the part in question every facility should be given for the matter to drain itself away. If the discharge is thin a more generous diet should be allowed; if it is dark, thin, and fetid, it will be advisable, in addition to a more nutritious kind of food, to give some tonic medicine, and to inject some stimulants, such as a weak solution of sulphate of zinc or diluted nitric acid, into the cavity from whence the matter issues.

Even if matter, as suggested, does not form, there may be a non-disposition to throw out ossific matter wherewith to repair the fracture. If this is found to be the case the application of a blister to the parts adjacent to the lesion, in addition to the injection just alluded to, may be tried, or the ends of the fractured bone may be irritated with some instrument, or a seton may be drawn through the part, and allowed to remain until it has produced increased vascular action.

Considering the position of the inferior dental nerve, which is chiefly sensitive, involved as it must be, it is greatly in danger of being pressed upon or otherwise irritated by fragments or spiculi of bone; and if tetanus should supervene the practitioner must not be astonished. I have not met with a result of this kind, nor have I heard of one; I nevertheless am surprised that it does not occasionally occur.

Fracture of the Nasal Bones.

The nasal bones, as is well known, form a very prominent part of the facial region of the horse's head; and considering how likely runaway horses are to come in contact with hard substances, or being run against under similar circumstances, renders it somewhat remarkable that more cases of this kind do not occur. To be sure, we occasionally meet with cases of fracture of these bones; a few have come under my own notice; but in nearly every instance the fracture has been confined to one of the nasal bones only.

Now, although both these bones may be fractured at the same time, yet, as the force is much more likely to come in contact with only one bone, fracture of the two is not so likely to take place; and even if the centre of the face is struck, the force will be indirectly received by the septum nasi, which, by virtue of its position and elasticity, would ward off the concussion to a considerable extent.

The same force which would fracture these bones in an aged horse would, if applied to those of a young one, merely,

perhaps, bend them inwards, or it might break one of the tables only. I very well recollect a case of this kind in a cart-colt, in which the depressed bone encroached so much upon the nasal passage as to cause a whistling noise to be made during the act of breathing. This defect might in all probability have been obviated if an attempt had been made to raise the depressed bone into its natural position when the accident first occurred.

If one table only is fractured and the other merely bent, the lesion would to some extent correspond to that which in long bones is termed the "green stick fracture."

If either of the nasal bones are broken quite through it will be complicated with laceration of the mucous membrane of the air-passages; especially would this be the case if the accident took place at the lower half of the bone only.

The common integument may or may not be penetrated; but even if it is I should not expect to find any portion of the fractured bone projecting through it in an outward direction, as the force would tend to drive it inwards, lacerating, as before stated, the mucous membrane; and the superior branch of the lateral nasal artery may not escape being severed.

If, however, the fracture should occur to the upper third of the nasal bones, and a portion of them is driven inwards, it will only project into a cavity termed the nasal sinus. This sinus is also lined with a mucous membrane, which is continuous with that of the nasal passages; but it is very much thinner, and by no means so vascular; the hæmorrhage, therefore, would be comparatively slight; nevertheless unfavorable results might accrue.

Symptoms.—The symptoms consequent upon the fracture of the nasal bones will, of course, vary in degree, according to the extent of the injury inflicted.

Deformity, and perhaps hæmorrhage also, will exist to a variable extent; the breathing will be somewhat impaired if the nasal bones are depressed; and, in addition, there is much swelling or other obstructing causes to the free transit of air through the nasal passages.

If the injury be confined entirely to one bone, the impediment to respiration will be greatly diminished, as compared with what it would be if both were involved to the same extent. Both bones, however, may be fractured at their upper third, and fragments of them considerably depressed inwards, without scarcely any defect in breathing being produced.

Treatment.—Whatever the nature of the fracture may be,

whether simple, compound, or comminuted, we should at once endeavour to raise the fractured bone or bones into their natural positions again; and this should be done, if practicable, as soon as possible after the accident occurred, or otherwise it will be accomplished with more or less difficulty, and perhaps not at all. The mode I would suggest to effect this object is is to prepare a piece of wood about one and a half inches wide, about half an inch thick, and of sufficient length for the purpose. This piece of wood should have its angles rounded off, and that part of it which is required to be passed up the nasal passage should be covered with a piece of thin wash-leather, to prevent the possibility of any splinter injuring the mucous membrane. The operator being thus provided, and the horse favorably placed and secured, this rude instrument is to be passed up the nostril of the side affected as far as a little beyond the seat of fracture, when as much force as may be necessary, or that may be deemed prudent, should be used to raise the depressed fragments of bone. If the fracture is compound, and any portion of the bone projects through the skin (which is not very likely to be the case), it must be dealt with as recommended in compound fracture of the lower jaw; or if it is comminuted, and a fragment is found to be wholly detached, it should be removed with the forceps.

The segments of the fractured bone having been adjusted as nearly as possible in their proper position, means should be devised to retain them there. For this purpose two modes suggest themselves; the first is as follows:—To clean the skin as much as possible from dirt and other extraneous matter, and when it is thoroughly dry place some straps of *strong* adhesive plaster across the fractured bones. These should be carried a little beyond their outer boundaries, and in such direction as may be thought best.

These straps, if well applied, will be found to answer a very good purpose, especially when the bone is much splintered or the skin penetrated, as in compound fracture. In the latter they will close in the opening, and thus to some extent reduce it to a simple one; they will also materially support the broken bone, and thus prevent any portion of it from falling into the nasal passage or the nasal sinus.

The other mode of keeping the fractured bone in its proper position, which may be used with or without the former, and which will also tend to arrest hæmorrhage, should it exist to any extent, is to plug the nasal passage with fine tow or cotton wool. This may be done in the following way with perfect safety.

A piece of soft but strong twine may be firmly tied around a small bundle of one of the above agents, which should be sufficiently large to fill the passage. The free end of the string should be long enough to reach some little distance out of the nostril, whereby the operator may be enabled to hold it firmly while the rest part of the passage is being plugged.

By this arrangement the whole of the plugging can be removed at any time that may be deemed advisable, and there will be no danger of any portion of it passing in a backward direction, through the posterior nares into the fauces.

There need be no apprehension about the horse's breathing being interfered with if one of the nasal passages only is plugged; but I need not say that both must not be so treated, as the horse cannot breathe through his mouth.

Not very long since I was requested to examine a cart-horse, in consequence of his having a chronic discharge from his nostrils, which I found depended upon his being affected with glanders in one of its worst stages.

During my examination of this animal I observed that he breathed with some difficulty, to which observation the man who brought him said, "Yes, sir, he has done so for a long time before he had the discharge from his nostrils; and we considered it to be due to an injury he had received to the front of his face," which, no doubt, was correct. The fact is that undue contraction of any part of the air-passages, whether natural or acquired, produces an unusual sound during the act of increased respiration. I have no doubt but many a sound horse has been pronounced a whistler from his making an unusual noise during increased breathing, and which has wholly depended upon the form of the face.

Large nostrils, with constricted nasal passages a few inches above them (which very often exist in well-bred horses with "dishing faces") will of necessity, under some circumstances, make an unusual sound in their breathing. This is often observed after a horse has had a sharp gallop and is suddenly pulled up. I have noticed it very frequently in some of the best-winded horses.

The nasal bones of the cart-horse above alluded to had been fractured in a transverse direction, directly opposite their articulation with the anterior maxillary bones, at which point they were, as before stated, depressed, and the nasal passages thereby diminished in their calibre. This deformity, however, would not have materially interfered with the use-

fulness of this horse had he been free from glanders. But, on the other hand, if he had been of another breed, and required for fast work, then, under such circumstances, the deformity in his face would have been of importance.

Fracture of the Frontal Bones.

The frontal bones, as might be expected from the position they hold, are sometimes fractured from causes similar to those which produce it in the nasal bones; the results, however, are likely to be of a much more serious nature. In comparative osteology, as in that of human, it is common to name but one frontal bone. I am of opinion, however, that it is better to describe them as a pair, the union of which forms the interfrontal suture.

Those who have taken the trouble to disarticulate the bones of a very young horse's head know that the frontal are capable of being separated from each other as late in life as any other bones in the head. This being the case, I see no reason why these two should be described as one bone, any more than many of the other pairs. Then, again, I feel persuaded that by studying the bones separately their connection with each other, and with the others they articulate with, they will for practical purposes be much better understood. These views I hope to illustrate in the description I am about to give of the diseases affecting them, whether they are traumatic, idiopathic, or symptomatic. The frontal bones are usually described as belonging to the cranial portion of the head, and I am aware that in the human subject they form a large portion of that division; but in the horse and many other animals such is not the case to the same extent, for in this variety of the lower animals quite as large a portion of them belongs to the face as the cranium.

It is important to observe that each frontal bone forms a part of the boundary of three important cavities, namely, the cranium, the orbit, and the frontal sinus; the latter is chiefly closed in by it; the first containing the brain and its membrane; the second the eye and its appendages; and the third, although it does not contain any organ whatever, nevertheless it demands our consideration in an anatomical point of view, in consequence of its being so frequently the seat of disease, requiring thereby surgical aid.

Not only is the student in anatomy, physiology, and surgery, as applied to these bones, and the parts they assist in forming, interested, but he who takes a far wider range of thought, and is desirous of understanding what influence form and capacity may have, not only on the character of

his brother man, both mentally and physically, but also that of the lower animals is likewise interested.

These are important considerations in reference to domestic animals; and I am drawn unintentionally to them by the remarks I am about to make on the frontal bones, which, as is well known, form the most prominent part of the forehead.

All admirers of the "true horse," the Arab stallion, when alluding to his intelligence as a horse, seldom omit to mention his broad prominent forehead and large placid eyes, in contradistinction to those of other varieties of the horse which so often in this respect have narrow, constricted foreheads, small pig-like eyes, and mean sour-looking countenances.

I admit that horses whose physiognomies agree with the latter description often possess great physical powers, perhaps the greatest; but, according to my experience, they have often bad tempers, are by no means companionable, and are only cared for because they can win a great stake.

If the Arab horse, as a rule, is not so swift as the so-called improved thorough-bred horse, he nevertheless is quite as endurable, and his good temper and playful disposition qualifies him for that which he often really is, viz., the servant and companion of man and the pet of women and children.

I find that I am being carried away from my subject; but it is upon an Arab horse, therefore I hope to be excused.

In returning to the description of the frontal bone, I would invite my young readers to look at one in all its parts, and contemplate, at the same time, the position it holds and the purpose it serves in the animal frame.

It does not burden the head by its weight, for its outer and inner tables are so arranged as to form a large cell or sinus, into which the air passes, and, by being thereby warmed and rarified, the weight of the bone, in a sense, is endured. Neither is symmetry destroyed by its bulk; on the contrary, when the bone is fully developed and capacious it gives character to the horse.

As before stated, it partially lodges the brain, and materially protects it from injury, as it also does the eye and its appendages; but it is sometimes fractured, and our aid as veterinary surgeons is required to assist nature in mending it.

(*To be continued.*)

OBSERVATIONS ON THE CATTLE PLAGUE IN IRELAND AND THE CATTLE DISEASE IN THE ISLE OF MAN.

(*Continued from* p. 779.)

THE DISEASE AFFECTING CATTLE IN THE ISLE OF MAN.

Shortly after the report of an outbreak of cattle plague among the stock of Ireland reached England, intelligence was received from the Isle of Man, where restrictions against the importation of stock from infected countries had existed for some time past, of the sudden appearance of a destructive malady among cattle in different parts of the island, giving rise to the apprehension that rinderpest had been in some way introduced into the country.

Some animals were found dead in the fields, others had died after a short illness, and, from the character of the *post-mortem* appearances, the veterinary inspector deemed it necessary to call the attention of the authorities to the resemblance which the affection bore to the plague which was destroying cattle in England. Immediate and active measures were taken to prevent the extension of the disease should it prove to be rinderpest; diseased animals were slaughtered, cordons drawn round the farms on which cases had occurred, and an inquiry was instituted at the request of the lieutenant-governor of the island.

The investigation was commenced on June 2nd by the examination of the viscera of a cow that had been killed four days previously. The carcass was exhumed and dissected, and the following morbid changes were observed.

The lungs were congested and emphysematous, particularly the anterior lobes. The trachea was healthy, excepting in a few places where patches of soft exudation existed. The tongue and buccal membrane of the lips and gums were perfectly free from disease.

The rumen, reticulum, and omasum were healthy; but the abomasum was congested over the whole internal surface, and presented, in places, those peculiar erosions or excavations which are so commonly associated with plague, but which we have observed in this viscus in other diseases, and even in a normal state. The parts were altogether much decomposed, and the evidence which they furnished was

accordingly not considered satisfactory; but as only a few days had elapsed since the animal was destroyed, it was considered advisable to continue the cordon round the farm, and to keep the other cows, about thirty in number, under observation.

On the same day an animal in the immediate neighbourhood of the farm where the preceding case occurred was reported to be ill, and on visiting the place it was ascertained that the cow had been sick for three or four days; the first symptoms noticed were diminution of milk, loss of appetite, and constipation. The animal, when examined, was found to be standing with her head thrust against the wall by the manger. Her aspect was one of extreme depression; the eyes were sunken, the conjunctiva was blanched, and there was an excess of lachrymal secretion; the nasal membrane was reddened and covered with thick mucus; the mouth was normal, save a slight tinge of yellowish-white colour, and a faint red line round the gums of the incisors; the breath was fetid; the vagina was slightly congested at the inferior part, and a little muco-purulent secretion was adhering to the membrane; the thermometer, introduced into this cavity, indicated 101·2. Had there been no suspicion of the existence of cattle plague in the country, there was nothing in the case under consideration to cause apprehension; but some of the symptoms—the sunken eyes, the red lines round the gums, the condition of the vagina, and the general aspect of the animal—might possibly have induced the belief that the disease resembled cattle plague in some of its features sufficient to justify the adoption of all precautionary measures; but, on the other hand, there were indications which were incompatible with the existence of plague, and the animal had been ill for some days, without any increase having taken place in the severity of the symptoms.

There was no disease of the buccal membrane or of the conjunctiva, not even a tinge of red, but rather a loss of colour; and the temperature, which in the early stages of plague and up to the time when the fever begins to decline, is always higher than natural, did not exceed the natural standard. Under these circumstances there was no difficulty in at once deciding that in this case the disease was not rinderpest. Pending further inquiry, however, in other parts of the island, it was not considered desirable to give expression to an opinion upon isolated cases, and accordingly no alteration in the existing arrangements was suggested.

Another and similar case was inspected a few miles distant; the symptoms were identical with those just de-

scribed, excepting that the signs of cerebral disturbance were more marked; the head was pushed forcibly against the wall, and during the previous evening the animal had fits of excitement. The cow died in the night after the inspection, and a *post-mortem* examination was made on the following morning.

The membrane of the mouth, tongue, and palate was found to be healthy; that lining the fauces was slightly congested, and covered with a little yellow exudation, not at all like the curdy mass of softened and loosened epithelium which is seen in cases of rinderpest. The larynx and trachea were filled with frothy mucus; the membrane was slightly reddened, the colour becoming deeper in the bronchial tubes. The lungs were free from disease, but the interlobular emphysema was precisely like that seen in cattle plague. The heart was distended with blood, and on the walls and columns of the left ventricle were hæmorrhagic patches.

The digestive canal was next examined. The rumen was filled with undigested food; the epithelium was readily separated, and exposed the membrane beneath, which was of a bright scarlet colour. In the reticulum the same peculiarity was observed in reference to the separation of the epithelium, but the lining membrane was free from congestion. Between the fold of the omasum the food was collected in hard plates, to the surfaces of which the epithelium adhered, and on every leaf in this viscus there were bright red spots, varying in size from a sixpence to a half-crown; the vessels were also filled with blood, and their course could be distinctly traced over the membrane. The membrane lining the abomasum was of a bright pink colour, mottled with red at the cardiac part; and towards the pylorus it became lighter in tint, assuming a dirty white colour, and was spotted with deep red patches at intervals. A considerable quantity of dirt with pieces of potsherds were found on opening in the interior of this compartment of the stomach.

The intestines were congested in patches, the cæc particularly at its apex; and upon the rugæ of the rectum there were deep red streaks.

The liver was healthy, and the gall-bladder filled with bile of pale yellow colour. The brain was congested, and a considerable quantity of red fluid existed under the dura mater and in the lateral ventricles.

Estimating these morbid appearances at their apparent value, and apart from any collateral evidence, it is more than probable that the state of the lungs, the blood-spots on the walls of the ventricles, and the condition of the mem-

brane of the third and fourth stomachs and the rectum, would have been, under ordinary circumstances, and in a district where plague was known to exist, at once accepted as indisputable evidence of the fact of the animal having died from that malady; but, with a knowledge of all the circumstances, the symptoms during life, the absence of any indications of fever, the suddenness of the attack, and in addition the observation of certain minute points of distinction even in those parts in which the lesions most resembled those of plague, it could only be said that the disease was characterised by symptoms which were totally unlike, and by lesions many of which very closely resembled those of rinderpest.

So far as the inquiry had advanced, nothing could be added to this conclusion, and the important question of infection remained to be decided by further investigation.

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 789.)

From the remarks I have made, it may be gleaned that there is no specific law as to what will produce lameness of the hock. We are told that a spavin is an unsoundness. Instances may be tendered to prove that a large exostosis does in some cases produce lameness; and in others, where large exostoses do *not* produce lameness. One instance will suffice for this. Four years ago I bought a brown gelding—very well bred—for five pounds. He was at plough at the time, and in very low condition. I saw a very large development of bone upon each hock. I was of opinion the horse would not suffer lameness; if he did, I should operate upon him. In any case he was worth five pounds. Many were the men who regretted not having purchased him, when I had been driving him for six or nine months. The exostoses were the size of a horse-chesnut, and situated at the upper part of the large metatarsal bone. The enlargement was all that could be seen, but from the action of the animal I have no doubt the hocks were in precisely the same condition as in No. 2, cited in the former paper. He was not what any person would like to call lame, but there was that peculiar rigidity of motion of the hocks which can only be known

after much investigation. It is from the fact of many of these and similar instances having been witnessed which led me to remark that horses were frequently *passed as sound animals* which were not so. We need only refer to that noted case, "Durie *v.* Hopwood," a short report of which appeared in the 33rd volume of the *Veterinarian*, at page 180. Two horses were purchased for £131 10s., with a written warranty that they were both sound, &c. These animals not being liked, were offered for sale to a dealer who had them examined by a veterinary surgeon, who certified that each horse had a bone-spavin on the off hock. The horses were tendered to the original seller and refused. They were subsequently submitted to three other members of the profession known for their skill, who confirmed the certificate of the first examiner. These four gentlemen are looked up to as being at the head of the profession in London. The horses were sent to Liverpool, and were examined by three veterinary surgeons of great reputation there, and pronounced to be *perfectly sound*. They were sold at Tattersall's for £57 10s., and were bought by defendant.

Defendant subsequently sold them, and they were examined by two veterinarians and *pronounced sound*. Since the purchase both parties were satisfied with their horses. At the trial, at Whitehall, one of the horses was taken to the door and examined by one of the witnesses for the defendant, who reiterated the statement made upon the first examination that he was *sound*. He had no spavin, and was free from blemish. For the plaintiff the first examiner referred to examined him at the door of Whitehall, and said, as upon the former occasion, the horse had a bone-spavin on the off hock, and was lame of it, and was *lamer to-day than when he last saw him:* he was very palpably lame—he had not a shadow of doubt about it. A verdict was given for the plaintiff. Now, how is all this to be explained? When we take into consideration the structure of the tarsus, and in a healthy condition examine the animal and note his action—one thing, however, must be borne in mind, there are very few free from disease—we shall, perhaps, learn that the movements of this joint are almost wholly confined to the upper part, *i.e.*, *above the astragalus*. This fact cannot be too strongly remembered. Such being the case, it is easily understood how good the eye and how large the experience must be to enable any person to speak accurately as to the *action* of the hocks. It must also be taken into account that the action of the hock is not altogether depending upon health or disease; there are numerous muscular developments above

that joint which have a powerful influence over its movements. If the propelling agents are well placed and abundantly supplied with nerve-force, the action of this joint will be materially assisted. It is more than probable many of us have been deceived occasionally in not fully comprehending these things. Again, it frequently happens that an animal has but one joint diseased. If an abnormal deposit is observed upon the joint of a limb and not upon the corresponding one, it is soon discovered; but if both are alike diseased, it is sometimes supposed that it is a large development of the joint, and not disease. Such cases are met with now and then. I have a perfectly formed hock in my keeping, such as I now allude to. If both tarsal joints are alike diseased, the action of the legs will be also alike no doubt; and if, as I have many times observed, there is an *evenness* of action, the horse will very probably pass as a sound one, unless there is some glaring enlargement of bone. I have known horses passed which were *palpably lame*. Sometimes an animal is examined and passed sound, and in a short time the new owner fancies there is a screw loose. His own surgeon is appealed to, in order to learn if his surmises have any foundation. It is in a case like this that a difference of opinion, as it is termed, is made manifest. It is said the animal has a *halt* in the near hind leg, and there is a spavin to account for the irregular action. This is made known, and a county or other court case is the sequel, because the first examiner, or he who pronounced the word "sound," adheres to the opinion expressed by him immediately after the examination. Some men will go through fire and water to maintain an opinion, if openly expressed: it becomes a serious question whether it is wiser to stick to the opinion once given, or to alter it. My own view of the case is to the effect that if an error has been committed it is more manly as well as honorable to at once acknowledge it. I think a man's reputation is not so much at stake if, when he has made a mistake, and upon a further and closer scrutiny detects the error, he apologises for it. This will answer in some cases when it is *merely an opinion*. I do not think there ought to be any need of offering an *opinion* as a general rule: *facts* ought to be established as the first grand principle of examinations as to soundness; then, if necessary, base an opinion upon those facts. This has been the aim I have always had in view in these scrutinies. I well remember having to examine three hunters for a nobleman; it was my first introduction to him. He begged me to be very careful, as he was to pay a very high price for one of them, a chesnut gelding. My

attention was called to two things—defects. I explained to him that I should divide the examination into two parts, viz., fact and opinion. I pointed to the fact, and then offered an opinion upon that fact. He seemed pleased at the novelty, as it was to him. Now to the point, by way of illustration. A veterinary surgeon declares that a horse has a spavin; ought there to be any doubt about it? A second is as positive that nothing of the kind exists; is it not a reasonable conclusion to arrive at, that the second examiner may be correct, assuming that the eyes of both are without defect? One would think so. I argue that in a case of *fact* there ought to be no second statement. I cannot conceive why there hould be a difference in the testimony of two individuass. What is to be done under these circumstances? The purchaser must inquire into the reputation of the examiner in each instance, and learn, if possible, what their antecedents have been. This is at best a painful proceeding, and ought not to be necessary. If, on the other hand, there is no fact mentioned save and except that the animal is lame and nothing can be shown to produce it, and the second examiner *denies* that the animal is lame, it amounts to an opinion. Again, it is stated that a splint is present, and no lameness. One man shall affirm it does not amount to unsoundness, and that it will never cause lameness; another, that although the horse is not lame, it *will* cause lameness. Here we have a fact corroborated, but the opinions are adverse. I repeat, I can understand such a position as this, but I do not comprehend the former.

(*To be continued.*)

HEPATIC DISEASE IN THE HORSE.

By E. Stanley, V.S., 5th Lancers, Lucknow, India.

The following notes are gathered from observations in the province of Oude:—Affections of the liver are of frequent occurrence in India. No breed of animals is exempt from this disease; but exotics are particularly susceptible, especially on their first introduction to the country, when it often proves fatal. As the animal becomes acclimatized, his susceptibility diminishes. (Among troop horses may be found natives of Arabia, Persia, Afghanistan, the Cape, Australia, and England; these last being introduced into the government studs

for the improvement of their stock.) Hepatic disease may originate from three sources, viz., exposure, improper diet, and insufficient exercise.

The horse, although indispensable to the country, and whose market value is much greater than in England, rarely enjoys the luxury of a stable, and when he does is usually confined by his picket ropes, as are the troop horses; but these latter stand in lines on the open plain, so secured that they can hardly move, having their heads fastened to pegs driven into the ground right and left, and their hind legs secured by a rope round each pastern, being made fast to a peg driven into the ground some feet in their rear. Here they remain daily exposed to the deadly rays of an Indian sun, against which we all provide ourselves, while stringent rules confine the European soldiers to their barrack-rooms from morning till evening for several weeks together. I do not wish to place the horse on a par with man, but cannot forget his frame is like ours, bone and muscle, with a similar nervous and vascular arrangement; that he is under the same laws of nutrition, and also liable to similar diseases. His scarcity and value surely suggest more considerate treatment than exposure to the refraction and glare from the heated ground which is intense, with hot winds blowing as from a furnace, followed by clouds of dust and periodical torrents of rain that give the country for miles round the appearance of vast lakes. Wet clothing, wet bedding, well trodden in mud, are the natural results; add to these, frosty nights and chilly blasts, and some idea is gained of the changes of temperature to which the horse is exposed. These external causes combine to retard the cutaneous circulation; the blood is driven to the large internal organs, the vessels of which are unable to bear this extra burden, being already debilitated by repeated shocks, and the weakest organ, namely, the liver, becomes overloaded—in other words, congested. In England exposure to changes of temperature usually affect the lungs; no case of this kind has come under my observation in India.

2ndly. Improper diet has an important bearing on hepatic disease. Grain, *Cicer arietinum*, or chick-pea, is the common food of the horse in the North and North-west Provinces. It is a rich diet, but is said to be without the heating properties attributed to beans and peas; nevertheless, I am satisfied that other grains mixed with it, or substituted for it, would have a beneficial effect on the constitution, especially when the animal is leading a comparatively idle life. Several animals with chronic disease of the liver have been kept at work by being fed on barley, but have speedily relapsed on returning to

their grain diet. Indian corn, barley, and oats are sparingly used, though the excellence of the latter is recognised by racing gentlemen. The natives give moot, linseed, and various cordial messes made of pungent seeds and herbs, mixed with coarse sugar and clarified butter, during the winter months, all of which have a fattening tendency. As a substitute for hay and straw, tufts of short grass cut up with the roots are used, well beaten to remove the earth, which is never thoroughly done, and consequently is a fruitful source of indigestion and hepatic disease. What the animal does not eat serves for a bed. A grass-cutter is kept for each horse, who scours the country every day for this allowance of fodder. As far as I can judge, there seems no reason to hinder the making of hay immediately after the fertilising season of the rains, even in sufficient quantities to last all the year. I have been informed it is general in the Bombay Presidency.

3rdly. Insufficient exercise acts its part in the production of disease. This will not be surprising, when we remember the horse is by nature accustomed to traverse large tracts of country in search of food, and his digestive organs show that he must eat a little and often. During the excessive heat all are more or less indolent; the horse is almost forgotten by his rider, often having only dreamy walking exercise with his unwilling groom. Can it be wondered at, if an animal with such treatment becomes fat and idle, or playful and vicious, according to his temperament?

After thus glancing at the general management of the patient, it may be seen that it predisposes to disease. The digestive organs must lose tone. The liver, having an undue share of duty to perform, is often the first organ to suffer; over-exertion is followed by exhaustion, the organ becomes debilitated, when slightly exciting causes produce active disease.

The greatest number of cases occur during spring and autumn—the extremes of temperature between day and night being then most felt.

The symptoms of this disease, unless carefully observed, may readily be mistaken for other affections, either of the abdominal or thoracic viscera. On entering the sick-box in an acute case, the patient is found to be suffering intense pain, standing with his head away from the spectator; countenance anxious, nostrils distended; respiration short and quick, as though he feared to breathe deeply; pulse oppressed and slow. So far the symptoms resemble congestion of the lungs, but auscultation will show these organs to be free from disease. Percussion over the liver will give unmistakable evidence of pain: the animal often turns

his nose to his sides and groans; sometimes walks cautiously a few steps, then bending his knees and hocks as if to lie down, almost touches the ground with his belly and rises again, the perspiration meanwhile trickling from his shoulders and flanks from pain; at last he lies carefully down, sometimes rolls a little, but more frequently lies quiet, often looking back. These symptoms may be mistaken for affections of the bowels. Perhaps he will rise two or three times in as many hours, but generally lies so obstinately as to permit himself to be drenched without moving. The bowels are constipated, a few hard balls of fæces covered with yellow mucus being passed from time to time; the visible membranes, which are a healthy pink hue on admission, in an hour or two assume a slightly yellow tinge, gradually deepening in colour, and by the time the pain is relieved are quite an orange hue. This symptom confirms the prognosis. If the case has been successfully treated, the pain is usually relieved in about six hours; but if, on the contrary, as often happens, the animal has been made too hot, and two or three doses of diffusible stimulants have been given, the respiration and pulse will become greatly excited, and profuse perspiration will break out. The hepatic disease thus aggravated is not marked by violent symptoms of pain, but the appearance of the animal is as one death-stricken; the pulse gradually assumes a hard wiry character, the membranes become of an orange colour and highly injected, the surface of the body cold and clammy; death closes the scene in a very few hours. Post-mortem shows the liver enormously distended with blood and bile, which flow freely from its surfaces when cut.

The primary symptoms as just described indicate the liver to be congested. Immediately preceding and during this state, bile is abundantly secreted; but, owing to the engorged state of the vascular system of the gland, it is unable to escape by the biliary ducts into the intestines, and is taken up by the absorbents and minute blood-vessels more rapidly during the cessation of congestion, thus finding its way into the circulation, where its effects on the nervous system are soon manifest by depressed spirits, loss of appetite, and an unhealthy skin, which disappear only as the system expels the poison, requiring days, weeks, or months, depending on the severity of the attack, pathological condition of the liver, treatment, &c.

The treatment will be the same as in other internal acute affections, but must be energetic and persevering. The disease is deceptive, the symptoms never indicating its severity, and, unless it is narrowly watched and combated, may prove fatal in a very short time.

In human practice, Antim. Tart. and Potass. Nit., in small and quickly repeated doses, act like a charm in relieving the pain; but they have not proved so valuable in the horse.

The acute symptoms being once subdued, inaction of the bowels is sure to follow, and must be anticipated. Twelve hours' delay, if not fatal, will make the case very tedious. A moderate dose of aloes has proved the most useful, because reliable. Saline purgatives and calomel are too uncertain at this critical period, and super-purgation is easily produced. Laxatives, diuretics, and tonics will follow as indicated. During convalescence, careful attention to diet is of the utmost importance. Substitute barley or oats for grain, giving small quantities with bran, carrots, and picked clean grass. Exercise according to the patient's disposition, avoiding exposure to extremes of temperature.

In an obstinate acute case, after the first symptoms are relieved, the effects of counter-irritation having passed off, the acute symptoms recur with all their violence in six or seven days. This combated, after a short interval a third or more attacks follow, which may well make one anxious for the patient, who is reduced to a skeleton (the rapidity with which the fat is absorbed is marvellous). Aversion to food and great prostration leave him dependent on good nursing. Life must be supported by the forcible administration of gruel, &c.

It is not usual to have a repetition of the acute symptoms in such quick succession, but the fire burns low and persistently. The patient progresses favorably for three or four days, the fæces assume a healthy colour and consistency, the appetite returns, the membranes gradually lose their yellow tinge, the pulse assumes a healthy tone, when he suddenly relapses (the cause not being apparent), and is decidedly ill; but there is an absence of the *acute* symptoms. This occurs again and again at irregular intervals, extending over several weeks, each successive attack being less severely marked. By judicious treatment his health is re-established. The liver is functionally restored, but structurally injured, according to the extent of which will be his susceptibility to future attacks.

Symptoms of chronic disease are not always apparent, as is found on *post-mortem* examinations of animals which have never been treated. The emaciated condition of aged animals is often traceable to this disease. Many chronic cases come under treatment, with loss of appetite, general prostration, harsh coat, yellow membranes, with diarrhœa, which sometimes escapes notice, lasting only a few hours,

during which the animal is very restless, but rarely lies down: the evacuations consist of drab-coloured, frothy, tenacious matter, with scarcely a trace of fæces. (This diarrhœa seems explained by an inordinate quantity of bile being secreted from the excited gland, finding its way directly into the intestinal canal, which increases the peristaltic action, and is thus thrown from the system with a large quantity of mucus.) This is followed by obstinate constipation. Sometimes the fæces assume a slate colour and consistence of stiff clay, and if accompanied by a quick, weak pulse, will prove very troublesome.

The urine is often scanty, of a deep reddish-black colour, which may be due to the kidneys having to separate more carbon than usual from the blood, owing to the torpidity of the liver. It is not a constant symptom, but often recurs in the same animal.

Treatment.—The native farriers give opium, catechu, &c., to arrest the diarrhœa; but it is a fatal practice. Even during the purging a mild cathartic is the surest remedy. It must not be forgotten that it cannot act for some hours. If in twenty-four hours after the attack the evacuations are pultaceous, instead of being absent or in very hard balls, the cure is almost effected; a little fever and diuretic medicine will restore the animal.

Post-mortem appearances are not in accordance with the symptoms manifest during life. It is a rare occurrence to find a sound liver in an aged animal, although he may never have evinced a sign of the disease. On examining a mare which had been destroyed, as her owner said, she was always thin and often had attacks of colic, the liver was so disorganised, that it fell to pieces on being lifted from its situation. Extensive hæmorrhage had taken place in the right and left lobes under the capsule, the amount of coagulated blood being equal to the size of the parts. The body was highly jaundiced.

The liver or parts of it are often found studded with hard miliary tubercles, with adhesions more or less firm to the diaphragm and contiguous organs. I have found the entire gland of a pale straw colour, very hard, nearly twice its natural size, which when cut into seemed to grate against the knife, being a mass of tubercles. There was no trace of softening; the horse had never shown any *acute* symptoms of the disease. I have met with no case of abscess in this organ, although it is of frequent occurrence in the human subject.

REMARKS ON THE NERVE OPERATION.

By Jos. Woodger, Sen., M.R.C.V.S., London.

In the last number of the *Veterinarian*, Mr. Taylor, M.R.C.V.S., Nottingham, directs the attention of the members of the profession to a method of simplifying the making of the incision through the skin in the nerve operation by substituting the use of the "seton scissors" for that of the scalpel.

It is now nearly thirty years since I, on many occasions, used the seton scissors instead of the scalpel to make the incision, thinking by the change of the one for the other I had gained an advantage. Further experience, however, proved otherwise, as in some cases where the skin was thickened and tightly adhering to the parts beneath, I experienced a great difficulty in raising it in order to make a clean cut; and in other cases the incision was irregular, and not in a line with the nerve. This led me to return to the scalpel. The one I now use for the purpose has a very short blade, scarcely a half inch in length.

VARICOSE POSTERIOR VENA CAVA IN A COW.

By J. H. Cox, Student of Veterinary Medicine, Ashbourne.

On the 16th of July I accompanied my brother on a visit to a cow belonging to Mr. Redfern, of Blue Bell, Tissington, four miles from this place. The animal had been perceived amiss for a few hours previous.

The symptoms present were, a quick and irregular pulse; respiration normal; expression of countenance good, and not indicative of pain, although the animal kicked at her abdomen when standing, and evidently wished to get down as soon as allowed. There was scarcely any tympanitis; the ears and extremities were tolerably warm; the visible mucous membranes were normal in appearance, and the appetite was but slightly impaired. The fæces were solid, and covered with mucus.

In answer to our inquiries, we found that the cow had been pastured with others, and no circumstances were known which were likely to affect her injuriously; the animals with which she was placed were quiet, and had been accustomed to each other for a length of time.

Treatment.—The cow was taken into a shed, and a purgative with vegetable tonics administered. Up to the 20th the animal seemed to be recovering; and although the dose of purgative medicine was not very large, it acted very freely. On the 20th we were again called in haste to see her, she being much worse. The symptoms were similar to those observed on our first visit, but more extreme in character; there was more tympanitis, and tenesmus was also present; the pulse was quick but feeble, the action of the bowels had almost ceased; the extremities, ears, and mouth were cold; the breathing was spasmodic; she was down, and could not be raised. As the owner wished everything to be done that was possible, a dose of purgative medicine with diffusible stimulants was administered; but in about four or five hours she died, without anything having passed the bowels or any change having taken place in the symptoms. On the following morning we made a *post-mortem* examination.

Results.—The thoracic viscera were free from disease, although the heart and venous trunks contained much less blood than is generally the case. On opening the abdomen, a large sac or body at once struck us as being foreign to the cavity when in a state of health. It could be compared to nothing more familiar than to the uterus containing a calf in about the sixth or seventh month of utero-gestation. It was quite pendulous in the centre of the abdomen, and its contents were semi-fluid. For the better convenience of examination, the stomach and intestines were removed. On the enveloping membrane of the sac being laid open, a gush of blood followed: this came from its centre, the blood in that part being fluid and brighter in appearance; the next layer was darker in colour and semi-coagulated; and after that, another layer two or three inches in depth, and of a straw colour, apparently fibrin, partly organized, and firmly attached to the enveloping membrane, which was a simple fold of peritoneum very much attenuated. The quantity of blood in the tumour could not be less than from thirty to forty pounds, although it was not weighed. The tumour seemed to depend from under several of the last dorsal vertebræ; and on removing the blood and cleaning out the sac, it was found to be continuous with the posterior vena cava. There was no tumour nor any obstruction to the vascular system in any other part that we could detect; the coats of the veins generally were of an ordinary thickness. The animal was six years old, in very fair condition, and was thought to have been perfectly healthy from her birth up to the present attack. The stomachs were loaded with food, the rumen especially; the intestines were almost

empty, and discoloured in patches where contiguous to the tumour. The uterus was healthy, and contained a small fœtus.

The cause of the varix to me seems mysterious, unless the loaded state of the stomachs produced it: there had been no known violence, and the cow had never got out of the field, or been seen running about. I think the muscular coat of the vessel must have given way some considerable time previous to the death of the animal, the thin coat being covered, as I have before mentioned, with a layer of fibrin. It is not improbable that rupture took place prior to the first attack, and the blood I have mentioned as having the appearance of fibrin being then exuded, and plugging up the mouth of the sac until the 16th, when an overloaded state of the stomachs acted as exciting cause, and produced the removal of the plug and the distension of the sac with blood. I can assign no other reason.

ON THE APPOINTMENT OF INSPECTING VETERINARY SURGEONS IN INDIA.

By "Beacon."

August 16*th*, 1866.

Some time ago I noticed in your valuable journal several letters and some articles on matters connected with the interests of the members of the Indian Veterinary Department; but more recently I have not seen any reference made to these subjects, although they concern the welfare and position of the members of the profession in this country.

I am not aware whether you have been informed of the publication of a new warrant by order of the Secretary of State for India, which was published in this country as far back as May, 1865, in Government General Orders, placing the veterinary surgeons of both services on the same footing as regards pay, and granting to both *the pay of their rank*, which, antecedent to the above period, was withheld from them most unjustly ever since the first publication of the royal warrant in March, 1860, and which was declared at that time to be applicable to the men of both services throughout India.

For many years past, the want of a head or principal to the Veterinary Medical Department in this country has been

sadly felt, not only in relation to public matters, but also as pertaining to the interests and advancement of each member of the profession serving in India.

Since the publication of the last warrant in May, 1865, this subject has been frequently discussed; but no decided action was taken by Government in the matter until just recently. As the step is a most important one so far as the interests of this department and the profession generally are concerned, I hasten to acquaint you of the change, and have the pleasure to append herewith a copy of the Order published by authority of the Governor-General in Council on the 27th July last, 1866.

"HEAD QUARTERS, SIMLA;
"*27th July*, 1866.

"No. 161, 1866.

"The following General Order by the Government of India in the Military Department is published for general information:

"No. 6340, dated 20th July, 1866.

"With the sanction of the Right Honorable the Secretary of State for India, the Governor-General in Council is pleased to authorise the appointment of Inspecting Veterinary Surgeons in India, in the proportion of two for the Presidency of Bengal, and one for each of the Presidencies of Fort St. George and Bombay.

"The Senior Inspecting Veterinary Surgeon in Bengal, who will be designated Principal Veterinary Surgeon, and the Inspecting Veterinary Surgeons in the Madras and Bombay Presidencies, will receive a staff salary of Rs. 400, and the second officer in Bengal a staff salary of Rs. 300, per mensem, in addition to the pay and allowances of their grade in the Veterinary Department.

"The Bengal circle will be divided into two circles for the purposes of inspection. The limits of these circles will be laid down under the orders of His Excellency the Commander-in-Chief.

"The Inspectors, when on tour of inspection, will receive travelling allowance at the usual rates, to be passed in contingent bills."

The following extract is from the *Indian Daily News*, August 2nd, 1866:

"VETERINARY SURGEONS.—The Senior Inspecting Veterinary Surgeon in Bengal is to be henceforth designated as Principal Veterinary Surgeon, who with two other Inspecting

Veterinary Surgeons, for Madras and Bombay, will draw a staff salary of Rs. 400, and a second officer in Bengal a staff salary of Rs. 300, per mensem, in addition to the pay and allowance of their grade in the Veterinary Department. They will also receive travelling allowance when on tours of inspection. Mr. Hurford, 7th Dragoon Guards, has been appointed the Principal, and Mr. Siddall, Bengal Veterinary Department, the Inspecting Veterinary Surgeon in Bengal." —*Delhi Gazette.*

You will see by the above that First-class Veterinary Surgeon Hurford, 7th Dragoon Guards, has been promoted to the rank of Senior Inspecting Veterinary Surgeon in Bengal and Principal Veterinary Surgeon, and Mr. J. Siddall, late Principal Veterinary Surgeon, Stud Department, has been made Junior Veterinary Surgeon for Bengal.

The former appointment as Principal Veterinary Surgeon in Mr. Hurford's present grade and rank in the Queen's service is worth about £1300 a year; and if he was promoted to Staff Veterinary Surgeon, the highest rank by the warrant a veterinary surgeon can attain to, the appointment would be worth about Rs. 1450 a month, or over £1600 per annum.

It is supposed that the Principal Veterinary Surgeon will proceed to head-quarters at Simla, and that his tour of inspection will extend over the Northern or Punjab division down to Umballa; and the Junior Inspecting Veterinary Surgeon's circle will include all the station in the North-west Provinces and Lower Bengal down to Calcutta.

Any further changes connected with the Veterinary Department in this country I will not fail to acquaint you of from time to time.

Facts and Observations.

The Poison of the Upas Tree.—Dr. de Vry, of Vienna, has obtained the upas poison in a crystallized state. He says that it does not act as a poison on the stomach, and only possesses poisonous properties when brought into contact with the blood.

To distinguish between Glucose and Cane Sugar.—M. Nicklés finds that when cane-sugar is heated with bichloride of carbon in a sealed tube, it becomes black,

while glucose similarly treated retains its original colour. Braun heats glucose with a solution of caustic soda, then adds a few drops of a solution of picric acid, and boils, when, if much glucose be present, a change to a deep blood-red colour takes place. Weaker solutions show only lighter shades of red. Cane-sugar does not produce the same effect.

Putrefactive Properties of Phosphate of Lime.—The property possessed by gelatinous phosphate of lime of accelerating the putrefactive process has been thought to explain its efficacy as a manure, and as an accelerative agent in certain diseases of the digestive organs. Fish-glue, being dissolved in water, was divided into two portions. To one portion some gelatinous phosphate of lime was added, and none to the other. Both were exposed to the same temperature. In thirty-six hours the first became liquid and exhaled a most offensive odour, while the other remained unchanged at the end of six days. Some chopped beef similarly treated underwent nearly the same change. M. Pasteur has shown this action to be dependent on the development of sporules which cause putrefaction.

Sanitary Science in Milan.—Every butcher's shop in Milan is a slaughter-house for oxen, calves, sheep, and pigs; and the killing is so openly performed, that it is by no means uncommon to see groups of men, women, and children greedily watching the action of the butcher's knife. In the summer, the stench arising from the offal and stale blood is really frightful, and our only surprise is that with the butchers' shops and the pestilential effluvia arising from the night-carts that roam about the town for hours, and particularly in the hot months of summer, Milan escapes an annual epidemic. The cemeteries are also a disgrace to the city. It is shocking to see the indecent manner in which the dead are huddled together.

The Trade in Animals.—On the 15th of March last, a select committee of the House of Commons was appointed to inquire into the manner in which the home and foreign trade in animals was conducted, and to report what regulations should be enforced with a view of improving the treatment of animals in transit, and to prevent the spread of infectious diseases amongst them. The most important recommendations of the committee are—

"That it should be made imperative upon all railway companies, or steamboat proprietors, who are engaged in the

carriage of animals, to thoroughly cleanse and disinfect the trucks, steamboats, and pens used by them after every journey or voyage; and that provisiou should be made under Government superintendence for the proper ventilation of all vessels employed in carrying cattle by sea; and also that similar provision should be made with respect to the vessels employed in carrying cattle from Ireland and Scotland.

"That it is not possible at present to dispense with a live meat market in the metropolis and other large towns.

"That the Metropolitan Market should be confined to animals intended for immediate slaughter; and that all animals exhibited therein should be branded, and not allowed to be exhibited for sale in any other market, but should be slaughtered within ten days, and that, subject to this regulation, the animals might be moved so as to allow butchers to take them to their own places and slaughter them.

"That the wilful exposure for sale in a public market of animals suffering from infectious disorders, such as rinderpest, sheep-pox, pleuro-pneumonia, or glanders, or the knowingly driving such animals upon the public highways, or conveying them upon railway or boat, should be rendered an offence punishable in a summary manner; and, if necessary, a bill to effect this should be introduced into Parliament.

"For the public interest it would be advisable, as far as practicable, to adopt a system of public slaughter-houses, and in all cases slaughter-houses should be placed under regulations and proper inspection, as is the case at present in some of the provincial towns; and your committee are of opinion that power should be given by a general Act to local authorities to acquire land for the erection of slaughter-houses, and to make regulations respecting them.

"That all imported fat cattle should be subject to the same rule as English fat cattle when exposed in a market; that is to say, marked for slaughter within a week, and not allowed to be exposed in any other market.

"That the Privy Council shall declare any country in which they have reason to believe the cattle plague is existing, to be an infected country, and to prohibit the importation altogether of animals therefrom, or to declare that such importation shall only take place at certain ports, and that animals so imported shall not be taken into any market, but be slaughtered at the port of entry within four days of their being landed.

"That, where practicable, there should be a separation of the fat and the store cattle markets."

THE VETERINARIAN, NOVEMBER 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

OPENING OF THE SESSION.

As these periodical gatherings recur, it is satisfactory to observe that the former students of the College do not lose their interest in their Alma Mater, but, as the time comes round, reappear to act for a brief space the student's part again, and often bring with them the representatives of another generation of Veterinary Surgeons to begin the struggle for fame and fortune. The audience which collected in, or rather overflowed, the lecture-theatre on Monday, October 1st, to listen to the introductory address by Professor Simonds, appeared to us to exceed in numbers any former meeting at which we had assisted; and it must have been gratifying to the Principal and Staff to see in the presence of so many familiar faces an evidence that distance formed no obstacle to those old friends whose kindly feelings prompted them to revisit the institution within whose walls they had years ago laid the foundation for knowledge that has grown with their years, and, in the many new faces around, to find an augury that the future would not be less successful than the past has been.

Looking back to the time when the first class of students assembled in the lecture-hall, and passing by an act of mental telegraphy to the present time, we cannot avoid the admission that more might have been done than has been done to elevate veterinary medicine in the scientific world: but of what educational system might not this be said? In the short space of half a century, a profession has been created—and not only so, but has grown and assumed fair proportions; and, by the law of progress, in another fifty years is there not reason to believe that its importance will be more fully recognised, and its members more competent to deal with the difficulties which in a peculiar manner belong to the study of animal diseases?

In the course of the opening lecture, the speaker touched upon topics of vast interest to the profession and the public: not confining himself to the mere scientific discussion of anatomical, physiological, and pathological subjects, he opened questions relating to rural economy, the cultivation of the land, the geological character of soils, and the botany of the pastures on which animals graze; and it cannot be questioned that without a knowledge of the elements of these sciences, an investigation into the causes which produce disease must be imperfect in its results. A comprehensive system of education is suggested here, but one not too extensive to meet the requirements of the time. The cattle plague has taught us how infinitely more difficult it may be to cure disease than to prevent it; and we have also learned by the experience of the past year how important it is to preserve our flocks and herds in health. It may be long before the doctrine is embodied in reality; but we hold it, nevertheless, that the true position of the veterinary profession will be only attained when its members are looked upon by the public as the guardians of the health of the stock in our country—when it is universally admitted that their duty is to prevent the admission, if possible, or at least to arrest the spread of disease—when its members, occupying a position which they must themselves achieve, proving their right by knowledge to possess it, exercise a beneficial influence upon agriculture, by indicating the systems of cultivation which are injurious to the well-being of stock fed upon the land, and by proving how close is the connection often existing between the diseases of plants and those of animals. It is not by sudden and violent reforms so-called that the grand object will be gained, nor is it by the aid of legislative enactment. The gradual extension of the educational system, the individual struggle to acquire knowledge, and the ultimate establishment of a higher standard of scientific qualification, must precede, or at least accompany, the elevation of the art and science of veterinary medicine to the place it is yet destined to occupy among the liberal professions.

Extracts from British and Foreign Journals.

THE GREAT WESTERN MILK TRAFFIC.

Almost all the great companies having termini in London carry daily large quantities of milk. To take the Great Western for example—in a single week in the current year, notwithstanding the cattle plague, as much as 66,000 gallons have been delivered at Paddington Station. This enormous quantity required about 5000 cans for its conveyance. These tall brass-bound taper vessels are sufficiently familiar objects to almost everybody as to render description unnecessary. They are to be seen on the passenger platforms, and not at the out-of-sight goods stations; the milk being in all cases, for rapidity of transit, conveyed by passenger trains. It is difficult to realise such a quantity as 66,000 gallons, or the number of cows required to produce the quantity, or the area of land necessary for grazing and feeding the vast herd. The average yield of milch kine is very variously estimated—the range between the lowest and the largest yields is very wide indeed, according to the breed of the cows, being from one quart a day to twenty. Assuming eight quarts as a fair average, and dividing the 66,000 gallons over the seven days of the week—for cows have to be milked and hens persist in laying on Sundays, whether it be proper or not for railways to utilise their produce—we have 9428 gallons delivered per day, or 37,712 quarts, which at eight quarts per day each is the produce of 4714 cows. If two and a half acres are allowed for the grazing and feeding of each cow, we have an aggregate for the herd of 11,785 acres, or about eighteen square miles, and this, in relation to the delivery at only one out of half a dozen milk-carrying London lines, and exclusive of the butter and cheese sent by the same or other grazing districts. In quoting the delivery of 66,000 gallons, a maximum rather than an average quantity has been stated. Unfortunately for the consumers of milk, the quantities delivered by rail fluctuate greatly from season to season, and even week to week. The family order for milk is tolerably constant from one week to another, or even from month to month, bnt the deliveries of milk at the Great Western and other stations will sometimes vary by 10,000 gallons in one week as compared with that immediately preceding or following it. If the milk-dealers only resorted to "the cow with the iron tail" to make up the deficiency, there would be no serious harm done; but it is to

be feared that the "experts" in the milk trade resort to tricks for giving even water pure and simple the appearance of rich milk without imparting any of its nutritive properties. The milk delivered daily at the Paddington Station comes from some of the richest grazing districts in England, the supply being mainly from Berks, Oxfordshire, Gloucestershire, and Wilts. On the West Midland line considerable quantities come from Bourton-on-the-Water, Stow-on-the-Wold, and thereabouts. On the main line consignments of milk are received daily from almost every station, as far as Bath inclusive. Swindon station alone sends from 800 to 900 cans daily; Wootton Bassett and Chippenham, celebrated as cheese markets, also send large quantities.—*Railway News*, Sept. 30th, 1866.

SLAUGHTER OF A HERD OF IRISH CATTLE.

NEWPORT; *Oct.* 1*st*, 1866.

DEAR SIRS,—By this post I send you a copy of the *Hereford Times*. It contains, as you will see, an account of the detention and slaughter of twenty-two head of Irish cattle, the particulars of which should be widely known.

I remain, dear Sirs,

Yours respectfully,

THOMAS WILKES, M.R.C.V.S.L.

The steamer "St. Elmo," Captain Mackay commander, from Bandon, Ireland, arrived at Newport at 2.0 a.m. on Saturday, the 21st of September, and at daylight part of her cargo, which consisted of 555 sheep and 31 pigs, were landed. Assistant-Inspector Williams examined these animals, and finding them all in perfect health they were passed by him. At 6.0 p.m. the remaining portion of the live stock, which consisted of six steers, one cow, and fifteen heifers, were landed at the Gloucester Wharf, when Mr. Wilkes, M.R.C.V.S.L., Inspector under the Cattle Plague Acts, Newport, gave instructions that these animals should be detained until he had communicated with the district committee of the local authority.

On Saturday morning, the Committee assembled at the County Magistrates' Office (Victoria Hall, Baneswell). present: The Mayor (T. F. Lewis, Esq.); Thos. Gratrex, Esq.;

Capt. Phillips, R.N.; J. R. Russell, Esq.; and H. J. Davis, Esq., clerk.

The Veterinary Inspector (Mr. Wilkes), the Assistant-Inspector (Mr. Williams), Inspector Sheppard (county constabulary), Captain Mackay, commander of the screw-steamer "St. Elmo," and Dennis Donovan, the owner of the cattle, were also in attendance.

Mr. Wilkes, addressing the Bench, said—I have detained on the Gloucester Wharf six steers, one cow, and fifteen heifers; they are the property of Dennis Donovan, and were brought into the port by the screw-steamer "St. Elmo," of Bandon, Ireland. I have to request your sanction (in writing) granting me the power to order the slaughter of these animals, pursuant to an Order in Council made by the Lords of Her Majesty's most Honorable Privy Council, and bearing date the 14th of April, 1866. It stated that no cattle shall be brought by land into the district bounded by the outer boundary of the counties of South Wales and Monmouth, by which that district is separated from the rest of Wales and England. No cattle brought by sea into any part of that district shall leave the place at which they are landed alive; but all such cattle shall be slaughtered within forty-eight hours from the time they are placed on shore.

The Bench.—Well, captain, what have you to say? Why did you bring the cattle into this port?

Captain Mackay.—Through sheer ignorance of the law.

The Bench.—Well, Donovan, what have you to say?

Donovan.—Shure I know nothing about it.

The Magistrate.—It seems a very hard case to order the slaughter of these animals. Are they fat and in good condition?

Mr. Wilkes.—They are store cattle in fair condition for grazing purposes. It is a hard case. My own impression is that the owner of the cattle has brought them into port being at the time ignorant of the law.

The Bench.—Cannot we do anything to relieve this poor man?

Mr. H. J. Davies.—Nothing can be done. This man had the opportunity of transhipping his cattle to the "Avon" screw-steamer, so that they could be removed to Bristol.

The Bench.—Is that the case?

Donovan.—Yes, your honour.

Mr. Wilkes.—I made the arrangement, Donovan agreeing to pay five shillings a head for their passage; but subsequently he met a countryman of his own, who persuaded him to leave his cattle on board the "St. Elmo." It is with

reluctance I press for your sanction to slaughter these animals.

Mr. H. J. Davies.—You cannot do anything else. You must grant an order to slaughter the animals.

The Bench.—We regret to say that we have no power to prevent the slaughter of these animals.

Assistant Inspector.—We cannot slaughter the animals to-day.

Mr. H. J. Davies.—You can slaughter them on Monday next. The order shall be made out presently.

The following order was subsequently made out:

"*Mr. Thomas Wilkes, Inspector under the Cattle Plague Acts, Newport.*

"We, the undersigned, members of the Cattle Plague Committee for the district of Newport, give our sanction to your causing to be slaughtered six steers, one cow, and fifteen heifers, landed on the 21st instant, in contravention of the Order in Council, dated 14th of April, 1866, from the steamer 'St. Elmo,' from Bandon, Ireland, and now being on the Gloucester Wharf at Newport; and we further sanction your giving a licence to the owner of the animals so slaughtered to dispose of the carcases on his own account, or, if the owner requires the local authorities to dispose of such carcases, then to dispose of the same and account for the proceeds to the committee.

"Dated this *22nd September*, 1866.

"Thomas Gratrex.
"Thomas F. Lewis.
"John R. Russell."

In pursuance of the above order, the cattle have been slaughtered, and the carcases inspected by B. Davies, Esq., M.D., Medical Officer of Health, who declared the meat fit for human food. At the time we write, a portion of the meat had been disposed of at an average price of 4*d.* per lb. The portion not sold was buried.—*Hereford Times, Sept. 29th*, 1866.

THE CATTLE PLAGUE.

By Howard Reed.

(*Continued from* p. 815.)

The conclusions arrived at by Dr. Gamgee would be of more importance were they drawn from a wider field. He has made but eight analyses : it will, therefore, be a matter of interest to see how far his views are confirmed by others who have been at work in the laboratory.

In *milk* he finds that the changes in its constitution are uniform and marked :—1st. The amount of sugar of milk is remarkably diminished. 2nd. The amount of butter is (except perhaps at the commencement) enormously increased. 3rd. The salts are slightly increased. 4th. The casein appears to be generally increased.

The same experimenter, making analyses of urine, discovered the colouring matter present in three cases ; in one the bile acids—leucine and tyrosine—being nowhere found. In the majority of cases urea, by per-centage analysis, was not diminished, and varied from 1·75 to 2·3 per cent.

Dr. Smart remarks upon the difference in the respective densities of healthy and poisoned blood. The temperature in both cases is the same—91° Fahr. ; but the specific gravity of corrupted blood is 59°, that of healthy blood 52°. The microscope invariably discovers an excess in the numerical proportion of white corpuscles to the red, as compared with health ; while in the case of *milk* it exhibits a consistence exclusively of fatty cells, crowded together and overlying one another.

In a recent number of the ' Homœopathic Review,' Dr. Wilson described certain phenomena which he had remarked by *auscultation* to exist in animals exhibiting none of the characteristic marks of the disease, but in which these characteristic marks were subsequently fully developed. Dr. Tripe, in his evidence before the Cattle Plague Commissioners, confirms this observation of Dr. Wilson's. He says, " By auscultation of the lungs and careful examination of the animal, the disease may be detected in a very early stage. I may state that I have auscultated several cows, and found certain alterations in the breathing sounds in each indicative of approaching congestion of the lungs, before the running from the nose and eyes commenced."—(Question 2729.)

Let us now return to the less obscure evidence of the inroads of disease.

Professor Gamgee's diagnosis agrees, with few exceptions, with those already quoted. He differs from Dr. Smart, whose experience leads him to consider "a short husky cough" to be often a symptom of pure rinderpest. He also directs particular attention to the striking restlessness of the animal. He observes, too, "that animals may become quite convalescent about the third day, but still the gastric or intestinal lesions may advance; and when least expected, a fortnight or three weeks after marked improvement, alarming symptoms may supervene, severe diarrhœa occur with the return of the other discharges, and death soon follow." The symptoms, when cattle plague is coupled with pleuro-pneumonia, Professor Gamgee has remarked to be more laboured breathing, greater prostration. The short grunt of lung disease begins early, and spasmodic action of the notrils is perceptible. The symptoms where foot-and-mouth-disease is coupled with the cattle plague are lameness and morbid condition of the feet, eruption of the teats, and tendency to congestion and inflammation of the udder. Amongst English writers there is a pretty general agreement as to these external symptoms of the plague in cattle.

In Sheep.—The symptoms, as observed by the Norwich Committee, are dulness and indisposition to eat or ruminate, the circulation and respiration being increased. In the second stage all the visible mucous linings are congested, rumination has ceased, there is a ropy discharge from the mouth and nostrils, with excoriations inside the lips and gums. In the third stage all these symptoms are increased, and accompanied by great prostration of strength and bad breath. After contact with diseased oxen, fourteen days elapse before the fruit of the contact appears; but when inoculated from the ox the disease has been produced in six days. In 1857 Dr. Kreutzer first described the symptoms of the cattle plague as observed in a sheep which had been inoculated on the 1st October. The period of incubation lasted till the 9th, and was followed by general disturbance, discharge from eyes and nose, prostration, moaning, and diarrhœa. Death ensued on the 19th. Dr. Maresch, who observed the disease in sheep carefully from 1860 to 1863, states that the period of incubation extends usually from seven to eight days. A violent case terminates on the fourth, fifth, or sixth day; but it is usual for convalescence to set in and be confirmed in ten to fourteen days.

Mr. Gamgee describes the symptoms in the *buffalo*: "In

general the febrile symptoms, discharges from the eyes and nose, erosions on the gums and lips, marked cutaneous eruption on the udders of the females and the rudimentary mammæ of the males, together with diarrhœa, are not severe, nor is the disease deadly." The crisis is attained about the seventh day, after which the animal usually recovers; but in severe cases death ensues about the fourth or fifth day.

Respecting these external symptoms of the plague in cattle, our living writers are generally agreed. In order to identify the present with former attacks, and with the same disease in Russia, it will be necessary to give one or two quotations. Professor Seifman, of Warsaw, observes:

"The beast eats little, stops its rumination, becomes nervous; the mucous membrane, gums, mouth, &c., throw out pimples; there is a running at the eyes and nose, and this running after a time gives out an offensive smell; an offensive diarrhœa ensues; the beast coughs, becomes thinner, sometimes grinds its teeth, lays down its head at one side, and dies without effort."

Layard, in his Essay 'On the Contagious Distemper among Horned Cattle, anno 1757,' p. 54, says:

"The first appearance of this infection is a decrease of appetite; a poking out of the neck, implying some difficulty in deglutition; a shaking of the head as if the ears were tickled; a hanging down of the ears; a dulness of the eyes. After that, a stupidity and unwillingness to move, great debility, total loss of appetite, a running at the eyes and nose. . . . . A constant diarrhœa, roofs of their mouths and barbs ulcerated. They groan much, are worse in the evening, and mostly lie down."

No one who consults the works of Layard and Flemyng can entertain more hesitation about the identity existing between the visitations of 1865 and 1744-57, than they did between that of 1744-57, witnessed by themselves, and that of 1711-14, observed and described by Rammazzini, Lancisi, and Lanzoni. It is worthy of remark that all these writers draw particular attention to the *pustular* character of the disease. Layard, in a letter to Sir Joseph Banks in 1780, says: "It is an eruptive fever of the variolous kind, and, though the pustules may have been frequently overlooked, yet none ever recovered without more or less eruptions or critical abscesses. . . . . Unlike other pestilential, putrid, or malignant fevers, it bears all the characteristic symptoms, progress, crises, and event of the smallpox."

Internal Symptoms.—In the first place, we will glance at the chief of these manifestations, as observed by the Norfolk Medical Committee:

"In its general appearance the flesh is much darkened in colour, decomposition proceeds rapidly, and a most characteristic smell is evolved from the abdominal viscera. The blood, which is dark, quickly and firmly coagulates. The larynx, trachea, and bronchial tubes, generally free from mucous, occasionally exhibit a few red spots. In *sheep* the lining membrane of the whole respiratory tract is frequently of a gangrenous greenish-black hue. The lungs of *oxen*, generally healthy, exude dark blood when cut. In *sheep* they are always congested and red mottled throughout; in lambs most so. The heart contains clots of black blood in both ventricles. The first stomach is always crammed with food, and the mucous membrane beneath its epithelial lining is frequently studded with minute red papillary points. The second stomach is usually healthy. The third sometimes moist, and its epithelium readily peeling or scraping off; sometimes the converse. In the former case the mucous membrane beneath is generally reddened with dark spots pervading a surface of fainter red. The fourth stomach, nearly always empty, the large vessels on its exterior generally full; the surface studded with dull red or bluish spots, or 'large portions of a deeper red, with here and there spots or patches of a still darker hue, either elevated above the surface or appearing like ecchymoses beneath the mucous membrane, giving the surface a resemblance to plum-pudding.' The epithelium is often gone in spots, leaving depressions which are rather abrasions than ulcerations of the membrane. In *sheep* these stomachs are occasionally found quite healthy, excepting a muddy appearance in the third. This viscus, however, has frequently a dark gangrenous appearance. The small intestines are always empty, and usually patched with red, and congested here and there. The duodenum is affected most constantly and to the greatest degree, and not unfrequently shows a papillated condition of the reddened surface. Small sebaceous tumours are often present. Peyer's patches are never found thickened or ulcerated, but are sometimes seen covered with a layer of discoloured and softened mucous membrane. In *sheep* the resemblance in these respects is complete, and the bowels, like the stomachs, are occasionally found pale and nearly healthy throughout. The large intestines are not very noticeably marked, save that the colon, in place of a red blush, is traversed with broad lines of a blackish-green colour, longitudinal and transverse. In oxen the *spleen* usually healthy, in *sheep* soft, and sometimes almost black in colour. In like manner the kidneys of oxen are healthy, and of *sheep* are not unfrequently soft and pulpy. The udders of milch-cows are empty. The skin frequently shows what appear to be true vesicles, most abundant behind the shoulders, but not confined to these parts, and presenting every appearance of a true cutaneous eruption."

Dr. Smart has made a most valuable contribution to our knowledge of this disease by tabulating the morbid lesions in the organs of more than 100 diseased cows. He has made his inquiry comparative, also, by dissecting pleuro-pneumonia and foot-and-mouth-disease cases, and placing the results obtained from these side by side with those of true uncomplicated cattle plague. This summary of pathological appearances is here fully given:

"*Invariable but not Characteristic.*—1. The state of the bowel resembles the condition found in the ordinary inflammation of the bowels. 2. The condition of the lining membranes of the bladder and uterus is such as

occurs in all congested states of these organs. 3. The central portions of the kidneys present the congestive condition found in the early inflammatory stages of these organs. 4. The heart, liver, and spleen may be regarded as functionally healthy. They are in the condition which results from exhausting disease of any kind, and the lining membranes of the air-passages exhibit the morbid changes which are present in acute bronchial catarrh. 5. The remarkable and unique gangrenous rings or patches, found on the folds of the third stomach, exist in only a portion of all the cases examined: they are therefore neither invariable nor characteristic marks of the disease."

"*Invariable and Characteristic.*—1st. The peculiar appearance and diseased condition of the lining membrane of the fourth stomach. It likewise manifests all the morbid changes so distinctive of this disease, in their most advanced and destructive forms. It is therefore the most characteristic lesion. 2nd. The reddened and congested condition of the vulva. 3rd. When eruption or roughening on parts of the superficial membrane of the mouth is found coexisting with the condition of the bowel already described, the pathological group is complete and unequivocal. As regards negative conditions, there exists no true understanding anywhere, and rarely any trace of inflammatory products is found. The reddened colour of the diseased membranes is due to vascular congestion in its extreme form, and not, as frequently alleged, to extravasations."

Of the Comparative Pathological Appearances, Dr. Smart says:

"With the exception of a partial reddening of the lining membrane of the fourth stomach, the pathological appearances in murrain disease bear no other resemblance to those found in rinderpest. In examples of uncomplicated pleuro-pneumonia, the characteristic appearances of both rinderpest and murrain are quite absent."

Complication.—Dr. Smart says that two thirds of the animals dissected (mainly Edinburgh dairy-cows) were affected with pleuro-pneumonia, which he represents as the most dangerous and frequent form of complication of cattle plague.

The Condition of the Skin, in the proportion of one third, nearly, of the cases treated by Dr. Smart, was such that an eruption appeared generally diffused, but most abundantly on the flanks. The eruption, as seen on the udder, had a vesicular character; and the date of its appearance was probably between the fifth and seventh day. Dr. Bristow writes of the eruption accompanying cattle plague:—"I have never yet seen a vesicle. I have never yet seen a pustule. I have never yet seen that destruction of the surface of the skin which in smallpox leads to pitting." Mr. A. B. Squire, M.B., says, in the letterpress that accompanies his exquisitely executed coloured photographs of skin-diseases:—"It has been a matter of debate whether the so-called pustules of the disease are really deserving of the name. This ques-

tion, I think, may be decided by the scabs, since scabs presenting the characters here represented (the size and thickness of a split pea) can, if we may argue from human pathology, originate only in *pustules* of corresponding size." Dr. Charles Murchison, in his letter to the 'Lancet,' in September, quite confirms Mr. Squire's view by several striking cases.

On that material point of *ulceration,* Dr. Smart affirms—"The whole mucous lining of the bowels is unduly soft, and its epithelium imperfect. There are no true ulcerations, and in this respect its condition differs broadly from the ulcerated typhoid in man. . . . The mesenteric glands show no lesion of structure."

This view I find to be supported by Mr. Pope, M.R.C.S., of York, whose experience has been scarcely less extensive. Dr. Murchison, who is of an opposite opinion, is sustained by Professor Röll ('Lehrbuch,' pp. 349-50), Dr. Gant, Professors Simonds and Gamgee. Dr. Wm. Budd argues also energetically in the same direction. Looking at the tendency of Dr. Brauell's microscopic researches, it would almost appear that what by the naked eye have been taken for pus-globules, are in reality that exuberant growth of cells which is typical of this disease. If so, the typhoid theory founded on the presence of ulceration is somewhat shaken.

Professor Simonds, communicating the results of his practical acquaintance with the rinderpest in the Steppes to the Royal Agricultural Society of England, in 1857, says:—"The rumen and reticulum (first and second stomachs) are healthy in most cases. In some few instances the epithelium readily peels from off their inner surfaces, when the vessels beneath are found to be turgid with blood. The rumen invariably contains a fair quantity of ingesta in the state usually met with in healthy animals. The omasum (third) is without structural change, or, at most, resembles the first and second. Its contents are frequently so dry and hard that they can be rubbed to powder between the fingers. The mucous membrane of the abomasum (fourth) is always highly congested, more especially towards the pylorus." The patches not mentioned. "Peyer's glands are not invariably diseased, but, like other follicular openings of the digestive canal, they are often covered with layers of lymph, beneath which ulceration is occasionally observed. . . . The chief ravages of the disease, as we have met with them, are in the large intestines. The blind end of the colon—the cæcum—was, in one case in particular, ulcerated over several inches of its inner

surface. . . . Their deposits of lymph, varying in size from that of a pea to the end of a finger—scabs, as they have been designated—usually stud the large intestines almost throughout their whole extent. . . . The inner surface of the bladder often resembles the mucous membrane of the large intestines, and the larynx is slightly ulcerated. The rest of the organs are generally healthy. The blood in all the vessels is *fluid*, evidently from *loss* of its *fibrine* (completely opposed to Dr. Gamgee's showing, p. 240). It is also darker in colour than ordinary *venous* blood."

This description, though differing in some important particulars from the foregoing, stands as a sufficient identification of the Steppe plague with that which is now running its course in this country. Similarly, by a reference to the records of the Italian visitation in 1711-14, and the English in 1745, preserved in the writings of Lancisi, Layard, Vicq d'Azyr, and others, the same connecting-link is found to exist between the *post-mortem* manifestations of the different periods, as that which has been mentioned as existing between those externally visible. These various outbreaks are as similar in character as are those of smallpox in different localities, and under differing circumstances.

Nature and Character.—Having thus become acquainted with the symptoms, we are now prepared to consider another set of opinions. Professor Gamgee says :

"The cattle plague is a specific, malignant, and highly contagious fever, known to us only as the result of direct or indirect communication from sick to healthy animals. . . . . It is a specific *bovine* fever, manifesting all its characteristic features in horned cattle alone, though experience has proved that there are circumstances under which it may be communicated to the buffalo, goat, sheep, deer, gazelle, zebra, and other wild ruminants. . . . . It never attacks men, horses, dogs. . . . . The animal poison which is the active agent in the development and propagation of the malady, originates in the system of the ox, is perpetuated in countries where herds of cattle abound, and is not to be found where bovine animals are wanting. . . . . The disease spreads from country to country through the trade in cattle. . . . . The poison passes through the system of other than animals of the bovine race, but appears to be deprived of much of its force until it returns to members of the ox tribe. The cattle plague is not a local disorder, it is not an affection of any special organ or group of organs. It is a systematic disease—a fever in which the mucous membranes and skin are specially implicated. The cell growth, fatty and molecular disintegrations, desquamation and discharge of the epithelial and epidermic cells, are typical of this disease. In this way it can only be classed amongst general diseases with fevers of a specific kind, and which originate from a specific cause, run a definite course, manifest a singular periodicity in their progress, and have a marked tendency to destroy life. The pathological process is constant. The temperature of the body first rises. General functional disturbance soon follows, the blood loses its watery parts and

soluble albumen, indicating also a large increase in the proportion of blood corpuscles and fibrine to serum. Assimilation is checked. The reservoirs in which the food is prepared for true gastric and intestinal digestion become torpid. The rumen, reticulum, and omasum retain a large quantity of solid food, and their movements are stopped. The fourth stomach ceases to secrete gastric juice, its epithelium is thrown off, a morbid cellular deposit clogs the gastric glands, and the proper preparation of aliment for intestinal digestion and absorption can no longer occur. The intestine is the seat of inflammation. Its contents indicate the drain of the blood of its soluble albumen and other products, the intestinal epithelium is rapidly ejected, and in some cases many of the glands become clogged with a deposit similar to that which is found in the follicles of the gastric mucous membrane. A free suppuration is nowhere witnessed, but discharges flow from the mucous membranes, and are highly charged with epithelial cells and the specific virus of the disease. The rapidity and completeness of the general functional disturbance is indicated by the albuminous and dark-coloured urine; the deposition and early putrefaction, fetor of the secretions, &c."

As to other features he agrees with the Norfolk Medical Committee, who express their opinion thus :—" With regard to the essential nature of the disease, there can be no doubt that it is due to a special poison of great subtlety; one capable of reproducing itself in the living organism; intensely contagious; capable of being disseminated widely by means of the air, and also readily conveyed by the clothes of attendants, the skins, viscera, &c., of the dead animals, or any solid substances which have become infected with it, given off by the exhalations and excretions of the living animals, and, moreover, capable of being artificially conveyed from animal to animal by means of the discharge both of the living and dead bodies." Not only do they consider that the disease is the result of a specific blood-poison, but that it is an eruptive disease, closely allied in its nature to the exanthemata in man; that it is both infectious and contagious; that it is communicable from ox to ox, from sheep to sheep, and between these two classes of animals by mere association; that it is also inoculable by means of the discharges from bullocks to sheep, from sheep to bullocks, and to each other respectively. That the disease, as seen in sheep, is identical in nature with that of bullocks, but is milder in type, and is also modified as to its *post-mortem* appearances.

Dr. Andrew Smart, deducing the character of the disease from morbid appearances, states :

" These give it no resemblance to the ulcerated typhoid fever in man. The analogy fails. The morbid appearances are peculiar. In so far as any resemblance to human disease exists, it points to a condition of the internal lining membrane analogous to that of the skin in acute scarlatina, and the disease might not inaptly be termed an internal or mucous scarlatina. The general congestive but non-inflammatory state of the mucous

membranes, the epithelial desquamation from the mucous surface, the increased temperature of the animal in the early stage of the disease of the incubation period and critical days, are facts which all tend to support this view; while the condition of the kidneys and the invariable presence of albumen and blood-cells in the urine lend additional confirmation to it."

Dr. William Budd, of Clifton, speaks thus of it:*—"Definite in character, affecting for the most part only a single species, having a period of incubation, occurring as a rule but once in life, specific in the highest sense of that word, and in its very essence a contagious fever, it is a perfectly typical member of that family of which human typhoid fever and human smallpox are familiar examples. . . . . What variola ovina is to human variola, that precisely is this typhoid fever of the ox to human typhoid, not identical in either case; not intercommunicable, essentially different in species, but so nearly related as to admit, on a superficial view, of being confounded, each with its counterpart." The common term applied to this malady by the French writers, including Reynault, Louis, Bouley, and Bourguignon—*Typhus contagieux*—sufficiently indicates the state of opinion concerning it across the Channel.

Professor Simonds, in the Report before referred to, says:

"It is difficult to speak with certainty of the true nature of the rinderpest, but it is evident that if the morbific matter on which it depends, having entered the system through the medium of the organs of respiration, soon acts upon the blood by converting some of the constituents of that fluid into its own elements, and that, while this process is going on, the animal gives no recognisable indications of being the subject of the malady. This period constitutes the incubative stage of the disease. The blood having thus become contaminated, its vitality impaired, and the poison augmented a thousand-fold within the organism, the brain and nervous systems, as the centres of sensation and motion, have their normal functions necessarily and quickly interfered with, and hence one of the earliest indications of the disease is a spasmodic twitching of the voluntary and other muscles of the body."

Then follows the battle in the body between the power of the poison and the power of the constitution:

"Ulceration of the mucous membranes, commencing in the follicles, may attend these processes, but it is not a necessary pathological condition of the pest. It is rather to be regarded as a sequence, depending for its existence on the amount of the contamination of the blood, the duration of the diseases, and the diminished strength of the vital forces. In all this we have a great similarity to the pathology of the smallpox; but in that disease the external skin is the principal focus of the malady, while in rinderpest the mucous membranes or internal skin are its chief seat."

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* Address read at the British Medical Association at Leamington, August 4, 1865.

Several physicians of the last century have left their views respecting the cattle plague which then made its appearance. They characterise it as a pustular eruption, allied to smallpox. Dr. Mortimer describes "scabby eruptions in the groins and axillæ, which itch much; for a cow will stand still, hold out her leg, and show signs of great pleasure when a man scratches these pustules or scabs for her."* Dr. Brocklesby remarks—"Frequently we may observe pustules break out on the fifth or sixth day, all over the neck and fore parts."† In 1758 Dr. Layard writes thus:—"Whoever will compare the appearances, progress, and fatality of the smallpox with what is remarked by authors of authority, as Ranazzini, Lancisi, and other observers, relative to the contagious distemper amongst the horned cattle, will not be at a loss one moment to determine whether this disease be an eruptive fever, like unto the smallpox, or not."‡ Vicq d'Azyr, a great French authority on epizootics, writing to Layard, said—"Il me paraît, comme à vous, que c'est toujours la même maladie qui a regné depuis 1711; et qu'elles a de grands rapports avec l'éruption varioleuse."§ In support of these opinions such men recommended and practised inoculation.

For Dr. Murchison's views we must refer to the 'Lancet' of September last, his 'Official Report' not having yet appeared. He there puts forth a series of propositions, upon which he attempts to establish the identity of rinderpest with smallpox. The main points of resemblance he considers to be in the prominent symptoms, the anatomical lesions, the peculiar odour after death, the duration of the fever stage, the extreme contagiousness, and the facility with which the poison is transmitted by fomites. He lays great stress, too, on the pustular eruption of rinderpest, and contends that, as smallpox is the only acute contagious exanthema in man that assumes a pustular form, identity must be more than probable. Beyond this, both diseases can be propagated by inoculation, which can be said of no other human malady than smallpox. It is necessary here to observe that these propositions were advanced as recommendations to the practice of vaccination, which, as Dr. Murchison fully admits, has since proved of no avail.

It would be of no service to carry these quotations further. From what we have seen, the disease appears to have no

* 'Philosophical Transactions,' 1745. Vol. xliii, p. 554.

† Essay on the 'Mortality among the Horned Cattle.' London, 1746, p. 33.

‡ 'Philosophical Transactions,' 1758. Vol. i, p. 531.

§ Ibid., 1780.

analogue in the morbid affections of the human race. To several of them it presents a singular resemblance, but with none an exact identity. A slight acquaintance with it has led pathologists to adopt a classification that has been abandoned on more mature consideration. It has been compared to typhoid fever, to diphtheria, to measles, to smallpox, and to scarlatina. Unlike typhoid fever, it has, according to the general bearing of the foregoing authorities, no ulcerated intestinal glands. Unlike diphtheria, it has no true false membranes. Unlike measles and smallpox, it would seem that the eruption is neither so constant nor so marked as to identify it with either. To scarlatina it bears a strong resemblance; but even here the similarity is not so thorough as to warrant its being classed as an equivalent. By those who claim for the cattle plague an identity with smallpox, it should be borne in mind that the arguments urged to demonstrate the identity of human and ovine variola are much stronger, and have yet failed to establish the proposition. Those who possess doubts on the subject will do well to consult Dr. Budd's valuable little pamphlet on 'Ovine Variola.' It appears that sheep do not purchase an immunity from rinderpest by passing through the severities of smallpox, which they should do were the two identical, nor does vaccination protect the sheep from rinderpest. In smallpox the eruption on the skin is principal, that on the mucous membranes subordinate. In rinderpest, on the contrary, it is the eruption on the mucous membranes that is principal, while that on the skin is subordinate. So that, while smallpox may be defined as it generally is defined—as a fever in which the eruption occurs on the skin—rinderpest may, in the same way, be defined as a contagious fever, in which the eruption falls on the mucous membranes. Some people call it therefrom intestinal smallpox, but as yet there are invincible difficulties to its being categoried either with smallpox or typhoid fever, notwithstanding that, like both, it is a blood-disease, resulting from the presence of poison absorbed into the system. Were this smallpox, the human subject would be exposed to it. This result is not obtained. It is true that Mr. Hancock exhibited what appeared to be a variolous eruption upon his hand, as an example of the special eruption induced by the cattle-plague poison, before a meeting of the Pathological Society; but many others have purposely inoculated themselves with rinderpest virus without any effect, and, supposing themselves protected by previous vaccination, have subsequently produced pustules by re-vaccination. Besides, amongst the non-protected population of Eastern Europe no

case of communication during early or recent attacks is upon record.

A few facts touching the *propagation* of this disease still remain to be disposed of in this section.

The announcement made by the Privy Council (August 3), "That the disease especially belonged to the ox tribe, and that it has never been known to attack any other domesticated animal," is certainly at variance with our knowledge now, although it was in conformity with the view expressed in 1857 by Professor Simonds. We are indebted to Dr. Crisp for having publicly stated that goats readily develop the ferment, and that in this country a zebu, a mouffler, a deer, and two species of antelopes have succumbed to it. Mr. Bouley, of the Alfort Veterinary School, has furnished a description of occurrences at the Jardin d'Acclimisation, Paris,* which incontestibly prove the vague term applied to this epidemic to be a misnomer, for the contagion introduced by two gazelles imported from London spread to forty-three animals, zebus, goats, antelopes, stags, Virginian deer, musk-deer, yacks, aurocks, and peccaries, which died of the poison or were killed. The facts concerning the peccaries must cause additional anxiety on account of the similarity of the visceral anatomy of that animal and the pig.

(*To be continued.*)

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

(*Continued from* p. 813.)

We now proceed to consider how much material must be supplied to the body to compensate for the waste which it experiences under different circumstances. We first propose to discuss how much food is requisite for mere subsistence; then to ascertain what quantity suffices for full health; and finally to supplement our information by investigating the amount necessary to support hard and continuous labour.

To treat these subjects properly would require a large volume; in our present limits little more can be expected

* 'L'Union Médicale,' Jan. 6, 1866.

than generalities. We need not search long to find cases in illustration of the quantity of food which is just barely sufficient to prevent starvation. In the well-known mutiny of the "Bounty" Captain Bligh and twenty-five men were set adrift in boats near the Friendly Islands, and from the close of April to the end of May subsisted on a daily allowance of one twenty-fifth of a pound of biscuit for each man, with a quarter of a pint of water, and occasionally a teaspoonful or two of rum. While each man must have wasted daily, at a minimum, 2 oz. of albuminous or flesh-forming matter, he received only 280 grains of solid food, containing 39 grains of flesh-formers, or only one twelfth of the daily loss of the body. Such an instance as this is one of prolonged starvation, not of subsistence. Perhaps no example of an existence prolonged by low diet is more remarkable than that of Franklin and Richardson in their memorable march from the shores of the Northern Ocean to Fort Enterprise. Only one hundred and forty miles had to be accomplished; but the march was undertaken in a climate demanding unstinted food, while the travellers could get little else to eat than *tripe de roche*, a sort of moss. The emaciated travellers found that a mile or two became a heavy day's journey. Yet we all remember that one of the party, Michel, a half-bred Iroquois, remained strong and active, while his companions were dying; the cause being afterwards ascertained to be that he lived upon the flesh of the dead, killing his comrades for a supply of food. With a strength thus preserved, Michel could easily have overcome Richardson and Hepburn in open fight, when the former, with a moral courage rarely surpassed, unsupported as he was by jury or court martial, became at once the judge and the executioner of the wretch who nourished himself by the sacrifice of his fellow-men. We have recalled this anecdote because it presents a desired contrast, and illustrates our meaning, that prolonged starvation is not subsistence in the sense intended by us. We wish to arrive at a condition of food on which a man might subsist without being able to do active labour, for from such a foundation we might build up the requirements of persons under varying conditions. In prisons we have persons confined in warm houses, and doing but little work, while we have also cases recorded where the allotted food has proved insufficient for their sustenance. Let us quote two instances in point. In Bengal, some time since, the rations of the prisoners were entrusted to a contractor, and, as might have been expected, he gave them in such limited quantity that the health of the prisoners suffered, and their weight

sensibly decreased. Under this system each prisoner received weekly 140 oz. of rice, 24 oz. of dahl (a kind of pea), and $3\frac{1}{2}$ oz. of oil. The *daily* value of this diet is as follows:

Flesh-formers	2·05 oz.
Fat	0·73 „
Starch and sugar	17·84 „
Mineral matter	1·30 „

The total carbon in this diet is 9·05 oz. Here, then, we have an instance of a diet on which men lived, though barely and insufficiently. As, however, these men were Hindoos, let us take another instance from this country. Some years since a medical man, wofully ignorant of the science of dietetics, recommended that the prisons of Dundee, Perth, and Paisley, should substitute treacle-water for milk; that is, an aliment containing no flesh-formers at all for one rich in them. The new diet was then as follows in the case of the Dundee prison:—Oatmeal, 10 oz.; bread, 6 oz.; meat, 1 oz.; treacle, 1·9 oz.; barley, 1·7 oz.; peas, 2 oz.; vegetables, 2 oz. Under this dietary the prisoners became discontented, although their health did not suffer materially; but Dr. Christison, who drew attention to the case, states that 50 per cent. of them lost in weight an average of 4·3 lbs. each. This gives us, then, an excellent instance of a mere subsistence dietary. Its nutritive value is expressed in the following numbers:

Flesh-formers	2·87 oz.
Fat	0·87 „
Starch	12·94 „
Mineral matter	0·48 „

The starch equivalent of the heat-givers is 15 oz., the total carbon in the food being 7·58 oz., and the ratio between flesh-formers and heat-givers is 1 : 5·2. One more instance will suffice. In the recent valuable inquiry into the food of the labouring classes, made by Dr. E. Smith at the instance of the Medical Officer of Health to the Privy Council, the diet is given of needle-women in London. Calculating this diet by our tables, we find its nutritive value to be the following:

Flesh-formers	1·90 oz.
Fat	1·04 „
Starch	8·94 „
Mineral matter	0·31 „

The total carbon in this diet is 5·8 oz., while the ratio of the flesh-formers to the starch equivalent, which is 11·36 oz., is as 1 : 6 nearly. That a diet so low as this should prevail

among our poor needle-women, inferior as it is to the insufficient rations of the Hindoo prisoners when fed on contract, sufficiently accounts for the excessive mortality among them as they pursue their tedious work—

> "In poverty, hunger, and dirt,
> Sewing at once with a double thread
> A shroud as well as a shirt."

Summing up what we fear may have been wearisome numbers to many of our readers, it may be stated generally that a man is reduced to the verge of starvation when he has only 2 oz. of flesh-formers daily in his food. The variation in fat and starch is less between a sufficient and insufficient diet than in the case of flesh-formers, but when the fat falls to 1 oz. daily and the starch to under 12 oz. the diet must be considered a mere subsistence one, even as regards the heat-givers. This estimate only allows 7·1 oz. of carbon in food, while 8 oz. may be considered a minimum, even in a low ordinary diet. In our poor-law unions it is usual to give a subsistence diet, or one suited to the small amount of labour in the workhouse test, and the Poor-Law Board have for several years discussed the nutritive value of the diets given. This experience is highly valuable, and is mainly due to an intelligent official of the board, Mr. Harris, who from an early period perceived the importance of regulating the dietaries by chemical instead of by arbitrary considerations. The following numbers express the value of the dietaries of able-bodied paupers, as the mean result for all England and Wales during the year 1863:

	Men.	Women.
Flesh-formers	3·19 oz.	2·85 oz.
Heat-givers	14·41 „	12·76 „
Mineral matter	0·60 „	0·52 „

We are now prepared to go a step further, and discuss what may be considered a full and satisfying diet for able-bodied men who are engaged in occupations that do not involve excessive mechanical labour. We might take as a class of this kind the large body of soldiers found in each country during peace, and whose support in activity and health ought to be and is one of its most important public concerns. As the result of experience, we do find that there is a singular accordance in the nutritive value of soldiers' diets in different countries, as will be seen by the following figures:

	England.	France.	Prussia.	Austria.
	Oz.	Oz.	Oz.	Oz.
Weight of solid food in ounces	59·67	48·6	55·0	40·75
Flesh-formers	4·25	4·40	4·0	4·21
Fat	3·46	1·43	1·10	1·39
Starch	15·67	16·39	16·85	15·11
Mineral matter	0·79	0·70	0·72	0·64
Carbon	11·90	10·45	10·50	10·38

An inspection of these numbers points out the singular fact that, although the amount of solid food varies considerably in quantity, as it also does in the materials of which it is composed, yet the amount of flesh-formers in each country is remarkably uniform, in all cases reaching or slightly exceeding 4 oz. daily, while the quantity of carbon is usually 10½ oz., although in the case of the English soldiers it is nearly 12 oz. These military diets are only in times of peace, for they are found to be quite insufficient during war. They are, in fact, hardly sufficient for the recruit during his heavy drills, although the sergeant fattens and thrives under them. We may therefore safely take the nutritive value thus expressed as being sufficient for men who are not exposed to heavy labour. We select one or two instances in which the daily consumption of food has been carefully weighed, from among the middle classes, to show the limit of variations :—

	Flesh-formers.	Starch equivalent.	Mineral Matter.	Carbon.
	Oz.	Oz.	Oz.	Oz.
1. Dr. Dalton; height 5 ft. 7 in.; muscular, athletic; philosopher	4·59	21·65	0·60	10·45
2. Dr. Hammond; 6 ft. 2 in., 14 stone; physiologist	4·25	17·78	0·58	9·28
3. Physician to Murray's Lunatic Asylum, Perth; age 33, weight 8½ stones; walks daily 3 to 4 miles	3·47	18·93	0·54	8·91

The numbers derived from the study of these middle-class diets lead us to results very nearly the same as those for soldiers, viz., that for able-bodied men, not engaged in active mechanical labour, there should be in their daily food 4 oz. of flesh-formers, from 2 to 4 oz. of fat, and from 8 to 12 oz. of

starch. Besides these ingredients, a man of this kind should receive daily ¾ oz. of mineral ingredients, 23 oz. of oxygen from the air, and about 80 oz. of water, partly contained in the food, and partly imbibed as drink. This is the only way in which a diet can be considered in the present state of science. The system which still prevails among some medical men, and among some Government officers, of looking only to the total number of ounces of solid food, without reference to its composition, is much more silly than would be the act of a builder who looked only to the total weights of building materials shot into his yard, without examining whether these aggregate weights consisted of water, lime, or bricks. Let us recapitulate the results to which we have arrived:— The mere subsistence food of a man, without labour, being 2 oz. flesh-formers, 1 oz. fat, and 10 to 12 oz. starch, we must add for comfortable and healthy nutrition to this diet, 2 oz. more of flesh-formers and 2 oz. more of fat, besides mineral matter, water, and air. We are now able to go another step in advance, and inquire whether such nutrition is fitted for a fully employed labourer.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

A FEW WORDS ON THE HOME OF RINDERPEST, AND THE SPONTANEOUS ORIGIN OF THIS EPIZOOTIC IN THE RUSSIAN STEPPE CATTLE OF THE GREY BREED.

(*Continued from* p. 818.)

In Kasan, according to Thiele, who was inspector for many years of the military establishments there, the rinderpest is of foreign origin. The same holds good in the government of Orenburg. On a visit to that government in 1836 the Kalmucks told me that the malady did not originate with them, and that the best means to preserve their cattle from the rinderpest was to change their pasture-ground to another part of the Steppes when the malady had broken out in the neighbouring herds. "We migrate then," they said, "with our kibilks and our herds into another part of the Steppes, and always against the wind." On my further questioning them as to what part the rinderpest came from, they pointed to the south-west; and so we might go to the frontier of China before we meet with a herd of cattle in which the

rinderpest, when it breaks out amongst them, could be said to be of genuine spontaneous development.

I know that others have made researches on the same subject, and have come to different conclusions, and that even the government of Charkow has been designated as the one in which the rinderpest has a spontaneous origin.* But this, as far as I know, has never been proved. I therefore cannot be blamed for maintaining that this malady is, as far as European Russia is concerned, imported. This opinion is based on my own experience, without, however, any direct proof. The cradle of the disease must be sought for out of the European governments of the Russian empire, and perhaps out of Russia altogether.†

I have yet to examine the second part of this subject, which advises that no cattle should be allowed to leave the Steppes without having been previously inoculated, while it is supposed that the germ of the rinderpest is the breed of the grey Steppe cattle, and capable of being developed in them even out of the Steppes.

This hypothesis, if I do not mistake, was first asserted by Walz, then by Viburg, and afterwards by Lorinser, and has found supporters up to the present time. It is based on the frequent experience that the Steppe cattle leave the Steppes in perfect health, and travel several thousand versts before being attacked by the rinderpest, which at times is even then very mild; while, if communicated by them through contact to the cattle of the district, it assumes a malignant type. Without being able or willing to refute these facts, I am certain that this circumstance can be explained without taking shelter under the mysterious self-development of the malady in this peculiar breed of cattle. The Steppe cattle pasture on unenclosed pastures. The preventive measures

* In a brochure published in 1864 Director Halicki declares that in twenty-seven years he has never seen a case of spontaneous development of the rinderpest in the government of Charkow; on the contrary, that every outbreak of it could always be distinctly traced to importation from other districts. According to him, the country of the Don Cossacks, and the government of Jekatrioslow, to the south-east of Charkow, are very suspicious as to the spontaneous development of the rinderpest.

† In a communication of the Imperial Agricultural Society, the title of which is 'The Question of the Utility of the Inoculation of the Rinderpest in the Steppes of Russia,' the author, Prof. Jessen, on that paragraph in the brochure, adds, "Thus, we are again referred to Tartary for the origin of the malady in question." The opinion of Prof. Jessen is here not quite clear. At p. 201 he says, "In the government of Cherson the causes of rinderpest must be found, as there it occurs spontaneously. I believe that in the southern part of the government of Orenburg, viz., in the Kirgish Steppes, the rinderpest is spontaneous amongst the horned cattle bred in the country."

in Russia are as yet in their infancy, and are in the Steppes, on account of the small number of veterinary surgeons, all but nugatory. If the rinderpest is introduced in one herd, there is every chance of its spreading to the others pasturing in the neighbourhood, and a general invasion of the epizootic follows. Even under these circumstances, in these herds, besides those which are less predisposed to contract the malady, there are also some which have acquired immunity consequent on having recovered from it. In a fresh invasion both the number of attacked, and the mortality also being much less than in cases where the malady attacks the cattle of a north-western or even a south-westerly district in Russia, can therefore be easily explained. Besides, the Steppe cattle, being reared under more unfavorable hygienic influences, are much hardier and less subject to sickness than other breeds which are more tenderly reared and less strangers to the freedom of nature. It is also a problem not yet solved as to whether Steppe cattle, being more frequently exposed to the contagion of the rinderpest, may not accommodate themselves to it, and moreover if cattle which have had the rinderpest may not give immunity to their progeny. The latter is supposed to be very probable. Cases in which calves from cows that had recovered from the rinderpest, and perhaps also from bulls, fathers of the same, not contracting the rinderpest, have often been observed, even in the last century. Neither must it be considered superfluous to remark, that already in the last century it was shown by Vicq d'Azyr, and after him by others, that the virus of the rinderpest, when carried by the wind, is less active on those cattle which are constantly kept in the open air than on those which are confined. Nevertheless, as I have already expressed in my report of 1854 on the experiments made by myself, that the generally received opinion that the Steppe cattle withstood the rinderpest better than others was not correct, at least not in all cases. When, for instance, an epizootic like that which broke out in 1854, in the colony of Helmenthal, out of 500 attacked 200 died, about 40 per cent.—such an outbreak cannot be considered benign; and in this way the rinderpest, as I have been credibly informed by the inhabitants, frequently prevails in Southern Russia. I may further state that the inhabitants of Helmenthal are wealthy and good farmers, and their cattle, which are all of the grey Steppe race, are well fed and cared for, and provided with good shelter in bad weather, which is not the case with the Bulgarian, Russian, Greek, and Hebrew colonists in Southern Russia. The mildness with which the rinderpest often attacks the Steppe

cattle cannot, therefore, in my opinion, be attributed to any peculiarity in their organization, but exclusively to the beforementioned accessory circumstances. Concerning the mysterious spontaneous development of the rinderpest in the grey Steppe cattle, the supposition is based on the capricious opinion of Lerinser, and was principally formed from observations made on the Hungarian Steppe cattle. But if this celebrated investigator were in existence at the present time he would, no doubt, alter his opinion, for no veterinary observer of the present day would assert that he has met with a case of spontaneous origin of the rinderpest in the Hungarian Steppes or amongst the Hungarian cattle on the roads after they had departed from them.

In Bohemia and Silesia, where this breed of cattle is preserved pure, without admixture of any other breeds, notwithstanding the spontaneous generation of the rinderpest, it has never been observed amongst them. At the exhibition of 1863, at Hamburg, Hungarian cattle were put in close contiguity with those of other countries, without the least apprehension of infection. In the kingdom of Wirtemberg Hungarian cattle have been kept for years on the royal estates, yet the rinderpest has never broken out. If the rinderpest is not of spontaneous origin in the Hungarian cattle or their cognate races in Wallachia, Moldavia, Rome, Naples, and Sicily, what grounds are there to suppose that it should be otherwise with the grey Steppe race? for the above-named races are in all probability descended from the former, which, at the time of the great immigration in the fourth century, were brought by the Huns from the interior of Asia to Europe. It would still be the more inexplicable when we consider that, for instance, the Hungarian Steppe race, having not only the same organization as the Russian grey Steppe race, but are also kept nearly under the same climate, and are treated in every respect similar to those in the Steppes of Southern Russia.

If the rinderpest does not break out spontaneously amongst the Steppe cattle in the Steppes, it is not just to suppose that it should break out spontaneously amongst them after they have left them. The hardship and the length of the journey, the change of diet, &c., could have very little influence on a breed of cattle reared under great privations, to which they are hardened by nature.

The fact that these Steppe cattle leave their country in perfect health, travel thousands of versts, suddenly become affected with the rinderpest on their journey in some place or other, when brought in contact with the cattle of the country,

is in my opinion to be explained simply by the fact that they have become infected on the road, and thus have become instrumental to the spreading of the disease, either by directly infecting others or by being the vehicle in carrying the virus.

These droves of cattle have great opportunities of becoming so infected. The rinderpest is never extinct in Russia; it always prevails in some part or another, and more particularly in those places along the high roads where these droves of Steppe cattle have to travel. It was the same in Austria in the time of Adami.

Every epizootic veterinary inspector in Russia is well acquainted with the devastation consequent on this spreading of the rinderpest, without the government troubling themselves, or even being made aware of it.

From the above it is clear that the opinion, based on the views of Viburg and Lorinser, that the Steppe cattle contain the germ of the rinderpest—in other words, that this malady is in them of spontaneous generation and capable of being developed at any period, even after they have left the Steppes—is devoid of foundation; and that the assertion of Russia being the cradle of the rinderpest has yet to be proved.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, HELD OCT. 3RD, 1866.

PRESENT:—The President; Professors Spooner and Varnell; Messrs. J. C. Broad, Cartledge, Field, Goodwin, Gowing, Greaves, Harrison, Hunt, Hunting, Moon, Pritchard, Robinson, Silvester, Thacker, Wilkinson, Withers, and the Secretary.

The President in the chair.

The minutes of the preceding meeting were read and confirmed.

Copies of works presented to the Library were laid upon the table, viz., 'A Prize Essay on Vivesection,' by G. Fleming, Esq., F.R.G.S., Veterinary Surgeon, 3rd Hussars; and a 'Clinical Note-book,' by Professor Armatage, of the Glasgow Veterinary College.

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Broad*—

"That a vote of thanks be given to those gentlemen for their kind presentations."—Carried.

The Secretary announced that the dental instruments presented by Mr. Gowing to the Museum had been returned from Messrs. Arnold and Sons.

A letter was read, dated July 26th, 1866, from E. Holland, Esq., M.P., to the following effect:—"That the Veterinary Surgeons' Bill was withdrawn for the session, and that in the meanwhile Government had promised not to grant a charter to Scotland during the recess."

A letter was read from Mr. William Wyer, of Folkingham, in reference to a supposed error in the Register, together with the Secretary's reply, requesting further information on the subject. No answer having been received to the last communication, the Secretary was requested to write again to Mr. Wyer.

The Registrar reported one death, viz., Mr. William Coupland, of Little Sutton, Chester. Mr. Coupland's diploma bears date April 27th, 1863.

A proof copy of the new Register was laid on the table.

It was moved by *Mr. Field,* and seconded by *Mr. Cartledge*—

"That 500 copies of the new Register be printed forthwith, and that they be gratuitously distributed as before."—Carried.

Professor Varnell moved—

"That members of the profession applying for copies of the Register be charged 1*s.* per copy, and that none should be given to the public without the sanction of the Council."—The motion was not seconded.

The Finance Committee reported that they had examined the vouchers and receipts of payment during the preceding quarter, and found them correct. The current expenses for the quarter amounted to £75 13*s.* 4*d.*, which they recommended should be discharged. This would leave a balance in hand of £572 18*s.* 9*d.*

It was moved by *Mr. Cartledge,* and seconded by *Mr. Gowing*—

"That the Report from the Finance Committee be received and adopted."

Cheques were ordered to be drawn for the current expenses.

A letter was then read which had been received from Mr. Wilkinson, dated August 27th, relative to taking into consideration the admission of certain veterinary medical officers of the army into the body corporate, who were desirous of becoming members of the Royal College of Veterinary Surgeons.

The proposition Mr. Wilkinson entertained was a temporary

suspension of certain by-laws, which would enable him to bring forward his resolution.

After some discussion,

It was moved by *Mr. Withers,* and seconded by *Mr. Broad*—

"That the by-laws from No. 27 to No. 34 be suspended." —Carried.

Mr. Wilkinson, in making application on behalf of the gentlemen who wished to be admitted into the body corporate, many of whom were known to the Council to be ornaments to the profession, mentioned that they had all undergone an examination for the army service, and were eligible, in every respect, to take their proper position, providing the by-laws referring to examinations were suspended.

After a very long discussion the following resolution was submitted by *Mr. Wilkinson*—

"That the by-laws relating to examinations be suspended for the purpose of admitting the under-named Army Veterinary Surgeons to membership of the Royal College of Veterinary Surgeons, and that a Committee, composed of some of the members of the Board of Examiners, be formed, and deputed to carry this resolution into effect:

James Collins	6th Dragoons.
George Fleming . . .	3rd Hussars.
James Lambert . . .	17th Lancers.
John Mills	18th Hussars.
George Oliver . . .	Royal Artillery.
Thomas Paton . . .	Cape Mounted Rifles.
James Marshall Wilson .	Military Train.
A. J. Owles	Veterinary Surgeon to the Staff."

This included all the veterinary surgeons practising in the army without the diploma of the Royal College of Veterinary Surgeons.

After some further discussion, the Council expressed an opinion that no exception should be made, but that a marked liberality be evinced towards all those who were now holding the Highland and Agricultural Society's certificate only.

An amendment was then made by *Professor Spooner,* and seconded by *Mr. Hunting*—

"That all those who hold the Highland and Agricultural Society's certificate only be admitted into the body corporate upon the payment of a fee of five guineas, and on undergoing such a written or other examination as may be determined upon by the Council, and carried out by a Committee of the Court of Examiners."

Mr. Wilkinson having assented to the amendment, it was carried.

It was then moved by *Mr. Wilkinson*, and seconded by *Mr. Harrison*—

"That the Committee be composed of the veterinary surgeons who are members of the Board of Examiners. Three to form a quorum."—Carried.

The subject of the examinations at Christmas having been brought forward,

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Broad*—

"That the examination of candidates for the diploma of the Royal College take place in the week preceding Christmas Day, and that the Treasurer be authorised to draw cheques for the examiners' fees, and also for the payment of the insurance due at Christmas."—Carried.

SPECIAL MEETING.

The business of the Quarterly Meeting having terminated, a Special Meeting was convened, the same members being present, for the further discussion of Professor Gamgee's motion on the alteration of "By-law No. 20," which was to the following effect, viz.—

"Twenty examiners shall be elected, and of these not less than twelve shall be members of the College, and the remaining eight may be men, non-members, eminent for their knowledge of medical science or chemistry. One moiety of each shall act as a sectional Court of Examiners for England, and the other for Scotland."

The new law having been proposed by *Mr. Field*, and seconded by *Professor Spooner*, was carried.

The original By-law was to the following effect:

"Twelve of the examiners shall be selected from the members of the College, and eight non-members, eminent for their knowledge of medical science or chemistry. A moiety of each shall act as a sectional Court of Examiners for England, and the other moiety for Scotland."

By order of the Council,

WILLIAM HENRY COATES,

Secretary.

SPECIAL MEETING OF THE COUNCIL, HELD OCT. 17TH, 1866,

For the purpose of confirming the alteration of By-law 20.

Present:—Professors Spooner, Varnell, and Gamgee;

Messrs. J. C. Broad, Ernes, Field, Gowing, Harrison, Moon, Wilkinson, Withers, and the Secretary.

It was moved by *Professor Gamgee*, and seconded by *Mr. Harrison*—

"That Mr. Broad, Vice-President, take the chair."

The minutes of the Quarterly and Special Meetings, at which the said By-law was adopted, were read and confirmed.

The new By-law having been read and submitted,

It was moved by *Professor Gamgee*, and seconded by *Mr. Field*—

"That the alteration of By-law No. 20, made at a Special Meeting of the Council, held October 3rd, be now duly confirmed."—Carried.

The amended By-law No. 20 was then duly signed and sealed, in accordance with the provisions of the Charter.

By order of the Council,

WILLIAM HENRY COATES,

Secretary.

THE VETERINARY MUTUAL DEFENCE SOCIETY.

IN accordance with a special request, we give insertion to the following letter, which was read by the Secretary at the meeting of the Midland Counties Association on the 18th ult.:

To the President and Members of the Midland Counties Veterinary Medical Association.

GENTLEMEN,—In the *Veterinarian* for this month you will see a report of the "Veterinary Mutual Defence Society," which I am glad to say already numbers between sixty and seventy members, including four professors, the President of the Royal College of Veterinary Surgeons, and nearly all those who have occupied that distinguished post, together with six presidents of provincial veterinary medical associations, and a large number of other eminent veterinary surgeons in London and in the provinces. They all write to us in the most encouraging terms, to the effect that the society has their approval and best wishes for its success.

It is very desirable that this society should become a strong one, so as to enable its promoters to carry out their generous intentions. Let us therefore seize this opportunity, such as never occurred before in the history of our profession; and remembering that this our day of opportunity will soon be passed, let us, I say, form such a society as shall be a credit and an honour to us.

Are not the names of such men as Professor Morton, Professor Varnell, Wm. Feild, London; Wm. Mavor, London; Wm. Robinson, Tamworth; Wm. Burley, Leicester; Professor M'Call, Glasgow; Wm. Cockburn, Glasgow; Geo. Bodington, Cardiff; John Lawson; Manchester; Charles Taylor, Nottingham; M'Taggart, Halifax, Edward Coleman Dray, Leeds; H. E. Wilkinson, Newcastle-upon-Tyne; R. L. Hunt, Birmingham; together with many others unnecessary to repeat—a sufficient guarantee for the genuineness and substantiality of the society? Names like these utter no uncertain sound, but are synonymous with reality and with success.

In thus addressing my profession, I am asking nothing for myself, but I am pleading the cause of some unjustly prosecuted professional brother, or maybe his poor widow or orphans. It may be observed that the benevolent element will always be subordinate to the defence feature of this society, and be held to have the first claim. Is there a member of the profession who would not feel an inward satisfaction in having contributed his mite to a fund destined to relieve the pressing wants of some poor, deserving widow, with a large family, left on a sudden wholly unprovided for by the death of some industrious, deserving, but needy brother practitioner? What a "godsend" it would be to that poor widow, to hand her £50 or £100 in her hour of need or to take one or two of her children, if promising youths, and send them to school, or apprentice them, and afterwards pay their college fees out of this fund!

I ask every man who now hears this letter read, to give in his name; and every member of the profession who may hereafter read it, to consider that it is addressed personally to himself, and at once send his name to the Secretary, Mr. Morgan, of Liverpool, to be enrolled as a member. During the past month our numbers have doubled; and if every member of our provincial associations will do his duty, I do not hesitate one moment in stating, that before our next annual meeting we shall have 500 members upon our list, and thus shall be enabled to accomplish all the useful purposes for which the society was inaugurated.

Yours most truly,

THOMAS GREAVES.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE members held their sixteenth quarterly meeting in the Royal Institution, September 12th, 1866; Mr. Haycock (President) in the chair. Present:—Messrs. Thos. Greaves, John Greaves, J. Brown, A. Lawson, — Collins, G. Morgan, — Buckley, — Howell, — Freeman, P. Taylor, T. Taylor, J. Taylor, and — Darwell.

The minutes of last meeting having been read and confirmed, it was proposed by Mr. P. Taylor that all fines for non-attendance be enforced.

Mr. Brackell was then proposed as a member by *Mr. Thomas Taylor*, seconded by *Mr. Howell*—Carried; also Mr. Walter Taylor, proposed by *Mr. Thomas Greaves*, seconded by *Mr. P. Taylor*—Carried; Mr. J. Paton, proposed by *Mr. P. Taylor*, seconded by *Mr. Thomas Taylor*—Carried. The President then read over the copy of a memorial forwarded to Miss Dick, of Edinburgh, and Mrs. Friend, of Liverpool.

Letters were then read from Miss Dick and Mrs. Friend.

Mr. Howell proposed a vote of thanks to the President on the able manner in which the memorials were compiled; after which Mr. Brown read an "Essay on Parturient Apoplexy, or Puerperal Fever," which elicited a warm discussion, the thanks of the members being freely accorded to Mr. Brown for the scientific and able manner in which he had treated the subject.

A vote of thanks being awarded to the President, the meeting terminated.

JAMES HASLAM, *Secretary*.

PARTURIENT APOPLEXY, OR MILK FEVER IN COWS.

Essay read before the Lancashire Veterinary Medical Association, Sept. 12th, 1866, by Mr. G. BROWN, *Veterinary Surgeon, Oldham.*

Mr. PRESIDENT and GENTLEMEN,—Immersed in the all-absorbing duties of my profession, I find little time for study and scientific research, and I feel that the subject I am about to treat upon must suffer as a necessary consequence; yet the practical lessons I intend to bring before you I trust will not prove entirely valueless. It may be thought by some that it is superfluous on my part to introduce the subject of our consideration to-night, as once since the commencement of our association it has been brought before us; but I am of opinion the subject on that occasion was by no means exhausted, and that there still remains a vast field for us to explore.

From my earliest connection with veterinary science it has been a matter of regret to me that, generally speaking, the attention of our brightest luminaries is exclusively devoted to the diseases affecting our noble steeds, almost ignoring those to which our cattle are exposed. But I would not have you for a moment entertain the idea that I would disparage the merits of the horse, or that I would exalt the ox at his expense, for I am second to none in my admiration of him; his splendid figure, exquisite symmetry, and noble qualities, endear him to every lover of the beautiful, and I should be extremely sorry to see him the subject of neglect by the profession with which I am identified, but I want to see the talents and energies of my brethren directed also to the scientific treatment of bovine animals whilst suffering from disease. And when this is done, when we are as familiar with the sufferings of cattle as of horses,

we shall have done more towards advancing our professional status than the new Veterinary Bill is ever calculated to do for that object, for I am opinion that success, whether viewed in its personal or general aspect, whether applied to us as individuals or to us as a body, depends more upon individual efforts than outward circumstances or legislative enactments. If we, as a profession, wish to rise, we may do so; and one mean towards that desirable end is bringing our talent and energies to bear upon the diseases affecting our cattle. And amidst all those direful disasters none stand forth more prominent than those consequent on parturition. It is true rinderpest may come as a whirlwind, sweeping away with its almost irresistible besom myriads of noble animals from our pastures and farmsteads, bringing men of opulence to the verge of bankruptcy. Pleuro-pneumonia, like a blight, may blast our flocks and herds, ruining our noble yeomen, but the foe we have met to combat is almost as deadly as they are. But we are about to ascertain his weak positions, to attack him in his strongholds, to mine and countermine his works, to unmask his batteries, and to learn how to unfurl the flag of health where disease and sickness abound. We are met to achieve a victory, and to gather fresh laurels to adorn the temple of science; for we shall have met to little purpose unless we go away better prepared to assuage the sufferings of animals little inferior to ourselves.

The highest paths of science are those which the medical man walks in, the choicest flowers that grow in her garden are culled by him, and the goal to which he is running is one of the noblest open to mankind. His office is not to spread terror and desolation upon myriads of our race, sowing sickness and fell disease broadcast, in the vain pursuit of glory and conquest, but to spread happiness where misery abounds, to alleviate physical suffering, and to impart strength and vigour to a weakened and relaxed system.

This, gentlemen, is the object we have in view, and allow me to say it stands before the world in a garb of unsullied purity and peerless excellence; the empty struggle after fame and popularity have little effect upon us—ours is a far nobler pursuit.

Yet, notwithstanding that many of the arts and sciences with which our world is adorned receive the homage of mankind, the merits of our own noble profession are very much overlooked. The poet, who, for moving our passions, shines upon the pages of history when all his mortal part has returned to mother earth—the painter, who strikes the eye and fills the mind with beauty, with his blending of shades and artistic touches, inherit a deathless fame—and the sculptor, who with his chisel imitates some of the world's celebrities, feasts upon the applause of the greatest and noblest of men—but we labour on silently and unobtrusively, our efforts being very much overlooked, although we confer immense benefits all around. But the time is coming when we shall stand upon a loftier pedestal than those we might envy now, and the world will esteem us in proportion to the benefit it has received from us.

I have stated that diseases consequent on parturition are not only

frequent, but very fatal, and our own country suffers immense losses every year in consequence. Having two appointments as cattle inspector, one in Lancashire and the other in Yorkshire, I have been able to collect statistics, and make some calculations which otherwise I should have been unable to do; and I find that fully 2 per cent. of the entire stock of cattle have died of parturient apoplexy and paralysis alone in one year. Now, if this is a fair average, the appalling fact stares us in the face, that in fifty years stock equal in number and value to the entire stock now existing in this country is swept away by these diseases alone (for very few cases recover that are attended by the ordinary "cow doctor"); and yet, in my opinion, the majority, if properly treated, would be restored. But before entering upon the treatment of parturient apoplexy, or milk fever, I beg to trespass a little further upon your attention, and make a few preliminary observations as to predisposing causes. The attention of the agriculturist in the rearing of cattle is mainly directed to two distinct objects, viz., the production of fat and milk, and he breeds from those animals that are remarkable for possessing these qualities in an eminent degree. In accomplishing these ends, however, health and vigour are to a great extent sacrificed; for do we not find that our obese, well-bred, heavy-milking, short-horn cows are most likely to suffer from diseases consequent on calving?

Another predisposing cause is the artificial mode of management to which they are subject, especially in this and surrounding districts. Cows are kept in shippens badly drained and still worse ventilated, during two thirds of the year without exercise, supplied with rich stimulating food, and breathing an atmosphere in the depth of winter equal to the height of summer in point of temperature. When we reflect upon the subject, is it any wonder that so many fall a prey to diseases of every kind? This system certainly tends to the production of fat and milk, but at what a sacrifice! The vitality of the stock is lowered, the power to ward off disease becomes feebler, and the future offspring is likely to become weak, debilitated, and deteriorated. The exciting causes are the changes that take place in the system at the period of parturition. There has been a vast amount of nervous force expended in supplying energy and vitality to the fœtus, and during labour another heavy call upon the exchequer has been made, sadly diminishing the funds. The mammary gland is kept in a state of constant excitement by milking every three or four hours; these continual drains bring about a state of bankruptcy, and the poor animal succumbs to what is popularly termed milk-fever. But nature, like a clever financier, when the demand has been excessive and the supply exhausted, commences a system of retrenchment by suspending some of the vital functions. The sight, hearing, the power of deglutition, are gone, the bowels become constipated, rumination arrested, and the secretion of milk suspended. Now, it appears to me that these symptoms point to one common centre, viz., an exhaustion of nervous force, implicating the cerebral, spinal, and ganglionic systems.

The *post-mortem* appearances also lead us to the same conclusion. The evidence is of a twofold character, and may be designated positive and negative; the positive evidence includes the impaction of the omasum with hard and dry ingesta, congestive appearance of the vessels at the base of the brain, likewise on that portion of the cord we find situated in the lumbar regions, and I have frequently found petechial spots on the outer and central portions of the heart, likewise on those parts of the endocardium situated round the auricular ventricular openings.

The negative evidence is the absence of disease in the other vital organs, viz., the lungs, liver, bowels, kidneys, &c. The stomach is hard and dry because there is not sufficient nervous force to carry on its functions, the bowels constipated because there is not sufficient power to carry on the peristaltic action, and the suspension of the secretion of milk, and the congestive appearance of the heart, are due to the same cause.

Treatment.—There are various modes of attaining an end, and in no cases that we are called upon to attend is the principle better illustrated than those under consideration this evening, obviously for this reason—that the nature of the disease is not well understood. Many practitioners have recourse to that empirical panacea for all the ills that flesh is heir to, viz., bleeding and purging; but if my theory be correct, that mode must be injudicious and unscientific, and, as far as my observation goes, very unsuccessful. It must be injudicious because inexpedient and unscientific, because the vital forces are already too low, and this method must lower them still more, and I can only compare it to accelerating the gushing cataract or increasing the velocity of a rolling avalanche. Narcotics have been recommended, and sedatives likewise, and it would be a mere waste of time to enumerate every agent that has been advocated, but, amidst them all, aconite, camphor, digitalis, opium, and belladonna stand conspicuous; but I cannot see the propriety of employing these and similar agents unless we endorse the homœopathic theory, "*similia similibus curantur.*" Cold wet sheets have been recommended also, with the view of setting up a fresh action in the system and causing perspiration. The mere fact of opening the perspiratory tubes will only relax the system without imparting vigour or restoring the vital functions. I would here make a passing remark, that I think it a desirable object to cause perspiration, but it is of absolute importance that tone and vigour should be imparted at the same time.

A friend of mine once stated to me in conversation that upon being called upon to attend these cases he invariably carried a treacle can in his gig, and gave in the first instance twelve or fourteen pounds of the contents, and was frequently successful; but the treacle can only act as an aperient, and I am convinced that the opening of the bowels should not be the primary object. If a stone of treacle can cure the disease, publish it to the world at once, for the farmer is quite as equal to the emergency as the scientific practitioner; but I feel persuaded that the methods I

have glanced at savour too much of empiricism for any around me to have recourse to. I will not say that cases thus treated do not occasionally recover, but it is in spite of, and not in consequence of, treatment. A veterinary surgeon of considerable cattle practice said to me, in speaking of these cases, the primary object is to open the bowels; in order to do this, give strong drastic purges, assault the stomach, as the fortress you mean to take, with one discharge of heavy artillery, and follow up by smaller and repeated charges. Give a drachm of croton seeds, in powder, combined with aloes and sulphate of magnesia, and then give smaller, say scruple doses, every two or three hours, until the bowels have responded; then pour in stimulants. I have tried this system, and have succeeded in opening the bowels; but, immediately after, my patient has retired from the stage, and gone beyond the reach of croton or stimulants either. We often make mistakes in doing too much. That desperate cases require desperate remedies is the article of belief of many, but a greater fallacy was never propagated, especially as applied to medicine; that principle carried out has filled many a cemetery as well as the knacker's yard. It should be our aim to follow the dictates of nature, for in pursuing the course which she directs we shall most assuredly do right. We frequently want to drive our bark against wind and tide; but our duty is merely to sit at the helm and steer the vessel, whilst nature stiffens our canvas and bears us into port.

In order to avoid the quicksands and rocks to which our own rashness would lead us in the treatment of this disease, let us first make our patient as comfortable as possible. In all probability she is lying in a narrow stall, scarcely sufficient room to move in—widen it. She is, perhaps, lying flat on one side—pack her up nicely, and let her rest upon her abdomen, with all four of her legs under the abdomen to serve as pillars of support, while the whole of the body is a little inclined to one side. If she shows a preference to either side, indulge her, but do not allow her to remain many hours without turning; pack her up with hay, tightly stuffed in bags; you will find this far preferable to loose or even tied straw, not so liable to derangement, and much firmer; well stimulate the whole course of the spinal cord extending from the dorsal to the lumbar and sacral regions, and down the course of the femoral nerves. A liniment that I find very efficacious for this purpose is prepared as follows:—two fluid ounces of the Tinct. Crotoni, with six fluid ounces of rape oil, but it is important that it be well rubbed in, and repeated several times. Give at the outset a good stimulating draught, and nothing is better than a pint of good whiskey in a quart of water; but see that the cow gets it. The mode of administering the draught is not by any means an unimportant feature in the treatment; it should be given in a wine-bottle, for two reasons—it is not so likely to disturb the animal, as it can be inserted in the side of, without opening, the mouth, and, from its gently flowing down, is not so liable to cause choking. Afterwards, give small doses of Carb. Ammon. with a little Sulph. Mag.; a drachm of the first and

two ounces of the latter; this may be given every three or four hours. In some cases very small doses of belladonna may be given with advantage, but take care not to push your belladonna too far, or give it at all unless the breathing is extremely heavy or there is evidence of strong uterine pains. Give linseed gruel, with a little treacle in it, frequently. Take care the attendant is not continually drawing the teats. Give half a pint of whiskey every four hours, until your patient begins to rally, then give it less frequently. After the bowels have moved withhold the sulphate of magnesia, but continue the carbonate of ammonia, blended with some aromatic or gentle tonic. Now give mashes of bran, a little green meat, carrots, or anything of a succulent or easily digestible character. The treatment may therefore be summed up in a few words. Make your patient as comfortable as possible, stimulate the whole course of the spinal cord, and repeat it; administer stimulants internally, blending them occasionally with a little aperient or a very small dose of sedative occasionally, according to circumstances; remembering the primary object is not to move the bowels, but to arouse the vital forces by stimulating the nervous centres. When this is done the bowels will generally move without having recourse to cathartic agents. Do not leave off your stimulants until your patient is fairly on her legs. But it will sometimes happen that, although the beast is convalescent, bowels in a nice healthy condition, the milk secreted in fair quantities, appetite returning, and rumination natural, she will sometimes lie for three or four days, making little effort to rise. Under these circumstances I would use blocks, but I am always very careful in having recourse to coercive measures; in fact, it is always with me a *dernier ressort*. I am sorry that my register of these cases, and the result, only dates from the commencement of the present year, but I can speak with confidence of the system of treatment I have recommended, for the nearer I have approached it the more successful I have been; and let me assure you that it is no wild chimera that I ask you to adopt, but a system I have tried most patiently and perseveringly. During the present year I have kept a record of the cases I have been called upon to treat, and I find in the six months ending June that I have attended thirteen cases of decided parturient apoplexy. In nine cases I have been successful, two became affected with paraplegia and were subsequently slaughtered, one died of uterine hæmorrhage, and the other was killed almost immediately after I saw it. With regard to these cases of paraplegia, I have no doubt upon my own mind that had they received proper attention from the parties in charge of them they would have recovered also. When this has been my success, I think I am justified in introducing the system to the notice of the profession, believing that if it is fairly carried out another dark cloud will be dispersed from the horizon; for although we cannot hope to succeed in every case, yet such results will follow this course of treatment as veterinary science has never witnessed, for I feel persuaded that no method for the treatment of these diseases that has ever been given to the

world approaches the stimulating system in point of value. But do not think for a moment that I imagine that I have succeeded in fixing the top stone in the temple of science, and that the whole building is now perfect and complete. I am not so vain; the foundation is laid, and some parts of the building already begin to appear, and if we to-night only fix one stone in the temple our labour will have produced its fruit. And now, gentlemen, I sincerely thank you for listening to my essay, and trust that from the conversation that may ensue some valuable remarks may be elicited that may grace the archives of our noble profession, and add a lustre to our diadem, which shall exist as long as time shall be.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

The eleventh quarterly meeting of the above society was held at Mr. Marshall's, Central Exchange Hotel, Newcastle-on-Tyne, on Friday, August 10th, at 4 o'clock.

Present:—Mr. H. E. Wilkinson, President; Messrs. C. Hunting, W. Hunting, Boyden, Dudgeon, Allison, Hedley, Marshall, Hardy, Mann, jun., and Hutchinson.

The minutes of the last meeting were read and confirmed.

The President read a letter from Professor Armatage, expressing his regret at not being able to attend the meeting, and describing a prevalent disease amongst pigs in Glasgow, called "Red soldier" by the vulgar. Mr. Marshall, of Glanton, stated that he had met with similar cases in his district.

Mr. Allison, of Thornley, then read a paper on "Enteritis in Horses" (formerly called red colic), and described the mode of treatment which he adopted, which was sedative and depletive. He considered that there was no fear of constipation. After the reading of the paper considerable discussion took place, in which Messrs. Wilkinson, C. Hunting, W. Hunting, Dudgeon, and others, took part.

Mr. C. Hunting proposed, and *Mr. Dudgeon* seconded, a cordial vote of thanks to Mr. Allison, for his able paper, which Mr. Allison acknowledged.

Mr. W. Hunting then expressed his willingness to read a paper on bloodletting at the next quarterly meeting.

The proceedings were brought to a close by a vote of thanks to the President, who expressed the great pleasure that he felt in presiding.

John Hutchinson,
Honorary Secretary.

Veterinary Jurisprudence.

HALIFAX COUNTY COURT, September 19th.

(*Before* Mr. Stansfeld, Judge, *and a* Jury.)

Butterworth *v.* Jagger.

DISEASED FACIAL BONES, OR NOT?

Mr. Smith, from the office of Mr. Holroyd, attorney, Halifax, appeared for the plaintiff; and Mr. Shaw, barrister, for the defendant.

This case was a breach of warranty of a horse that was bought by the plaintiff from the defendant at last Halifax fair, with a verbal warranty only, which the defendant admitted. Soon after the purchase the plaintiff discovered the horse was unsound, being a roarer. The plaintiff returned the horse to the defendant, who refused to take him back. He was therefore sold by public auction at Bradford, on the 5th of July. The plaintiff then brought this action against the defendant for the difference the horse fetched by auction and expenses and the purchase-money. To prove the plaintiff's case, two disinterested witnesses were called, who stated they heard the horse roar when he was drawing a cart with a ton weight in it up a hill.

To confirm this evidence, *Mr. Williams*, Veterinary Surgeon, of Bradford, and *Mr. Edward Coleman Dray*, M.R.C.V.S., of Leeds, were called, who were of opinion that the said horse was not only unsound from "roaring," but that the animal had an enlargement and depression of the facial bones on the near side of the head, which pressed upon the frontal sinuses, and occasionally produced, when the horse was at work, a discharge of blood from the left or near nostril.

For the defence, *Mr. Carter* and *Mr. Collins*, of Bradford, members of the Royal College of Veterinary Surgeons, and *Mr. Emmott*, of Keighley, a member of Mr. Gamgee's school, Edinburgh, were called, who examined the horse in question, and positively swore the horse was sound, and not a roarer.

Mr. Carter accounted for the discharge of blood from the nostril by saying that the horse might have a catarrh (a cold).

Mr. Collins said the blood might come from the stomach.

Mr. Emmott did not discover the depression of the bones of the face.

His Honour carefully summed up the whole of the evidence, and the jury, without retiring from their box, in a few minutes gave a verdict for the plaintiff.—*Yorkshire Post and Leeds Intelligencer*, September 21st, 1866.

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Bland, W. C., Newbury
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Flanagan, W. G., Reading
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Dobson, R. W., Holbeach
Gresswell, Daniel, Louth
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Howse, Henry, Lincoln
Hutson, Curtis, Market Rasen
McHugh, John T., Brigg
Metherell, Richard, Spalding
Roberts, John Thomas, Long Sutton
Santy, Arthur H., Market Deeping
Sharman, Thomas B., Old Leake
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Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Leggatt, J., Hanwell
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
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M'Gregor, Daniel, Seaton Delaval
Stephenson, C., Newcastle-on-Tyne
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Cave, Thomas, Nottingham
Cope, W., Newark
Hudson, Richard, Moorgate, Retford
Hutchinson, Henry, East Retford
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield
Talbot, Francis, Whatton
Wilson, Stretton R., Ollerton
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Jennings, William, Bicester
Mellett, Edward, Henley-on-Thames
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Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Dorrington
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Gregory, C. W., Bristol.
Hutchings, William, Kimpton
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Hutton, Josiah, Sudbury
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Petley, Edward, Barrow
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Thurston, Walter, Fressingfield

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Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes, W., John Street, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lowe, C., Dockhead, Bermondsey
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham

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Burt, William, jun., ditto
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Crofts, Henry, Arundel
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

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Hunt, R. L., Edgbaston
Ison, William Charles, Atherstone
Mather, Frederick, Warwick
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Stanley, Edward, Birmingham
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Coleman, John, Salisbury
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
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Blakeway, Francis, Stourbridge
Boulton, R., Bromsgrove
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Huntress, J. R., Dudley
Perrins, Henry Rose, Worcester

YORKSHIRE.

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Barker, Charles, New Malton
Barker, William, Middlesborough
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Case, F. M. M., Rotherham
Collins, Thomas, Bradford
Cooper, J., Market Weighton
Cortis, Richard, Shipton
Cuthbert, John, Leeds
Danby, F., Driffield
Day, Frederick, York
Dearlove, William, Harrogate
Douthwait, William, Beverley
Dray, Edward C., Leeds
Edmundson, W., Hornby
Elam, William, Huddersfield
Emmot, D. C., Keighley
Fallding, S. F., Wakefield
Freeman, Joseph, Hull
Fryer, J., Kirby
Hain, George, Thirsk
Harrison, T. M., Thirsk
Hedley, F., Richmond
Hedley, J. W., ditto
Holt, H. L., Northallerton
Horne, Thomas, Barnsley
Kay, John, Pontefract
Kirk, B. R., Settle
Lockwood, N. J., Kingston-upon-Hull
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Naylor, E. M., Wakefield
Nicholson, Robert, Womersley
Patterson, Charles, Dewsbury
Pemberton, G. H., Knaresborough
Pennock, James, York
Ringrose, J., Weaverthorpe
Robinson, A. E. G., Snaith
Scriven, William, Aberford
Secker, Charles, Knaresborough
Secker, Thomas, Ripon
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Duncan, A., Colinsburgh
Morris, John, Torryburn, by Dunfermline

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Simpson, Andrew, Fettercairn

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MISCELLANEA.

THAT the blood, in cholera cases, loses a considerable quantity of serum is well known, and recently Dr. Baudrimont communicated to the French Academy of Science the fact that a substance known as diastase (more familiar to chemists as an extract of malt) is formed from the serum so lost. Dr. Baudrimont suggests bicarbonate of soda, together with ammonia and mustard poultices, as the best remedies under such circumstances. Dr. Lisle reports to the same academy that the plan of administering sulphate of copper has been wonderfully successful in cholera cases. Before he commenced trying it he lost twelve patients out of fourteen, but since only five died out of twenty-six. His formula is as follows:—Make a solution of 5 gms. of sulphate of copper in 100 gms. of distilled water. Then prepare a potion containing 1 gm. 50 c. of that solution, laudanum 10 drops, sugar and water 120 gms. Dr. Velpeau, however, declares that the success Dr. Lisle has met with in cholera treatment in Marseilles has not been attained in Paris.

OBITUARY.

WE have to record the death of Mr. D. Sayer, M.R.C.V.S., Norwich, aged 52. His diploma bears date May 5th, 1841.

ERRATUM IN NO. 466.

Page 815, 17th line from the bottom, *for* "on the Name of Rinderpest," *read* "on the Home of Rinderpest."

THE

VETERINARIAN.

VOL. XXXIX. No. 468. DECEMBER, 1866. Fourth Series. No. 144.

Communications and Cases.

REMARKS ON SOME OF THE DISEASES AFFECTING THE FACIAL REGION OF THE HORSE'S HEAD.

By Professor Varnell, Royal Veterinary College, London.

(*Continued from p.* 878.)

Many points of considerable interest in connection with the anatomy of the frontal bones, and their importance in relation to the diseases they are often the subject of, may to some extent have slipped the memory of a few of my readers. Should this be the case, a briefly detailed description of such parts as are most vulnerable may not be altogether uninteresting.

Like other flat bones, the frontal have each two tables, with an intervening osseous cellular tissue, termed diploe.

In the centre of each bone the two tables are so far removed from each other, as are also their thin osseous plates (the diploe), that a large open space is thereby produced, which is termed the frontal sinus.

Inwardly each bone has a thin plate which extends from the outer table to the inner, and when these are in close apposition one with the other, they form a complete bony septem between the two sinuses. Outwardly each bone assumes the form of a thin plate (the orbital plate), which is nearly vertically placed, but it inclines obliquely from before backwards and outwards. Each has an elongated notch in

the centre, which receives the wing of the ethmoid bone, and thus forms an osseous boundary between the orbit and the antero-lateral part of the cranium.

This part of the wall of the cranium offers less protection to the brain than any other, for if any hard-pointed substance penetrates the orbit in an inward and backward direction, there is great danger of its being forced through this thin plate of bone into the cranium, and the brain thus become seriously injured.

Projecting in an outward and slightly in a backward direction from about the centre of the frontal bone is a thick curved process, which I have usually described as the orbital process. It forms the upper part of the rim, or osseous portion of the roof of the orbit, which in the horse is not closed in supero-posteriorly by bone, as is the case with man. No part of the frontal bone is so frequently injured as the orbital process, which, I think, might be expected from the exposed position it holds.

From its junction with the parietal bone above to that of the nasal bone below, the frontal bone is exposed to external violence; yet, with the exception of the orbital process, it is seldom fractured, which is to be accounted for to some extent by its form.

Sometimes, however, such lesions do take place, but they are rarely attended with very serious results. If such should be the case, the inner table will most likely be fractured, as well as the outer. The inner table of the frontal bone forms a part of the boundary of two cavities, the superior half that of the cranium, while the inferior portion bounds the supero-posterior part of the nasal passage.

Structurally, also, these two portions of the inner table differ. That of the upper half is hard, and even vitreous on its cranial surface, while the lower division is of the usual density of ordinary bone. The frontal sinus is lined by a thin and slightly vascular mucous membrane, continuous with that of the other facial sinuses, and also with the mucous membrane of the nasal passages. This takes place through an irregularly-formed opening at the upper part of the space between the two turbinated bones. This opening will be alluded to again when considering the diseases of the frontal sinuses.

I shall not allude to fracture of the cranial portion of the frontal bone at the present time, except so far as it may be found necessary from its being complicated with similar lesions of the facial division, which is very often the case, and therefore cannot very well be avoided.

With the exception of the orbital processes, these bones are able to resist heavy blows without being fractured, or the concussive force seriously injuring the brain. The outer tables may be driven inwards into the frontal sinuses, but if the inner one be not broken the brain will escape injury, as will also the cribriform plates and cells of the ethmoid bone. Should, however, the orbital process of this bone be fractured, it is obvious that very important organs may be seriously implicated. Those most likely to be damaged are the lachrymal glands, the supero-orbital artery and nerve, and even the eye itself may not escape being injured and vision thereby destroyed.

A result most to be dreaded from fracture of the frontal bone, or even if it be only severely bruised, is tetanus; the proneness to which, from such injuries, can only be accounted for through the position of the nerve alluded to above, and its liability therefrom to become seriously bruised.

Then, again, only a small portion of the anterior border of the orbital process of this bone may be broken off, or the broad tarsal ligament detached from it, either of which lesions is very troublesome to manage. There is a great tendency in this part of the bone, when injured, to ulcerate and crumble away; and if the fracture extends quite through this process, serious damage may be done to the organs situated beneath it.

Treatment.—In the treatment of fracture of the frontal bone, the same principles must be adopted as have been previously advocated, viz., to use such means as are best calculated to control or subdue inflammatory action, to favour the process of reparation as much as possible, and to remove all sources of irritation from the horse with the view of ensuring tranquillity.

I have previously stated that the danger of concussion to this region of the head, and thus seriously injuring the brain or other nervous centres, would be very remote; nevertheless, as the force would be direct in this vicinity, it is possible that some derangement to the nervous system might be produced, and this will require our first consideration.

The effects of the shock may for a short time appear to be of no importance, indeed it may pass off altogether; but, on the other hand, unexpected symptoms may arise, indicating that the brain or its vessels are seriously affected. Extensive fracture of the actual parietes of the cranium is possible, involving the venous sinuses; and when such is the case, the chances of recovery are very slight indeed.

Should I extend my observations to diseases of the cranial

portion of the head, I shall then allude to lesions affecting that region, with the phenomena and results arising therefrom; but for the present I purposely omit referring to them, except, perhaps, incidentally. I may remark, however, in passing, that our course of procedure in affections of either of these regions will be influenced to a great extent by the age of the horse, his condition, and his money value, the latter being always a great consideration with the public.

Should fracture of the frontal bone take place immediately over the centre of the frontal sinus, and be produced, as it almost of necessity will be, by great violence from without, the shattered bone will be necessarily driven inwardly. It may be simply bent or indented inwards from its being only partially fractured, and the common integument may not be even penetrated.

Should this be the case, I would suggest that no attempt be made to raise the depressed bone, as it would merely produce a slight blemish and be an eyesore to the owner of the horse. But as the indented bone would not press upon any organ whatever, and would merely diminish the sinus to a slight extent, the horse would not suffer pain or inconvenience.

On the other hand, however, should the outer table of the bone be more or less shattered, with an opening through the common integument as well, it will be advisable to readjust the fragments of bone as early as possible after the occurrence of the injury. The sinus will now be open, and the opportunity of fully exploring it should not be lost; and if any portion of detached bone be found within it, it should be at once removed. As there is sure to be more or less bleeding, it is possible that some clots of blood will have formed in the sinus, which should also be removed; for if they remain they will decompose, and may consequently be productive of harm.

The next thing to be done will be to raise and replace as accurately as possible the fragments of bone, and such means as at the time may be considered best to retain them in that position should be at once adopted.

There is not that tendency for the fractured pieces of bone to fall into the sinus as, without reflection, might be supposed to exist; the atmospheric pressure on their outer surfaces is, to a great extent, counteracted by the air within them, which passes in at each inspiration and presses on their inner surfaces as well; that is, should the opening from the nasal passage not be obstructed by clots of blood, or some other material.

I, nevertheless, should deem it advisable to use some artificial means of support, and for this purpose I have found that strips of strong adhesive plaster, as recommended for fracture of the nasal bones, applied in certain directions across the forehead, answer very well.

In support of this mode of treatment I will describe the outlines of a case of fracture of the frontal bone which came under my notice a few years ago.

A brown horse, the property of a job-master in London, while being driven in a brougham and going at a moderate pace, became frightened in consequence of the axle of the brougham breaking in two, thus allowing the fore part of the carriage to come in contact with his heels.

The horse, although before a very quiet animal, bolted, and while running at full speed he ran against a heavily laden carriage and fractured the left frontal bone. Other lesions of minor importance were also inflicted upon his limbs.

The common integument covering the frontal bone, although much bruised, was, nevertheless, not penetrated quite through. Blood, however, flowed profusely from the left nostril, and continued to do so at the time I saw the horse, although three hours had elapsed since the accident occurred.

In this case I observed a phenomenon which beautifully illustrated the fact of the air passing into the sinuses, for at each inspiration the fragments of the broken bone were raised, and at the expirations they fell in again, even below the level of the other parts of the bone.

The treatment in this case was very simple; after the forehead had been thoroughly cleaned and dried several straps of pitch plaster, which were found to adhere very firmly to the skin, were applied across the forehead, and means were taken to prevent the animal rubbing them off. From this accident the horse recovered without scarcely a blemish being left worth mentioning.

In treating injuries of the orbital process of the frontal bone, it must be borne in mind that the structures which clothe it superiorly are, as a rule, very much bruised; that if a portion of the anterior margin is broken off from the main body of the process, there is a great tendency in the bone to ulcerate; and as the supero-orbital nerve is likely to be more or less contused, there is, as before stated, a great danger of tetanus supervening.

These are points for our due consideration in determining the course we intend to pursue in our treatment of such lesions of this part of the frontal bone.

Under ordinary circumstances, in similar lesions to the

above in other parts of the body, I should not deem it necessary to give cathartic medicine, but I should in such as the one I am now describing, unless the horse is old, weak, and emaciated, when, instead, it might be advisable to give tonics and feed him more generously. The wound must be carefully cleaned and examined; the detached portion of bone, if any exists, removed; and if the skin and structures beneath are penetrated, their edges must be brought together as evenly as possible by sutures. Over the injured part I should now place a soft warm linseed poultice, made with water in which poppy heads have been boiled, or, if these cannot be obtained, some powdered opium may be used instead. The horse should have only soft food given him, be placed in a darkish box, and all sources of irritation removed as much as possible from him. The poultice should, of course, be changed as often as it is considered necessary, and the character and condition of the wound from time to time carefully inspected.

Most likely some portion of the contused tissues will slough. These may be removed in a mass, or they may disintegrate and fall away in small portions mixed with a thin discharge. It is possible that some part of the divided structure may have united by the adhesive process, hence the advisability of bringing them together as suggested.

The broken edge of the frontal bone may be disposed to heal, but I doubt if it is not far more likely to ulcerate. If, however, the surface of the fractured bone is disposed to granulate, any obstacle to healthy action should be scrupulously removed. Those sutures that may have lost their hold of the edges of the wound should be taken away altogether; the wound itself cleaned, and the parts brought together as nearly as possible by a compress or straps of adhesive plaster. If it is thought advisable, the most depending part of the wound should be left open for any matter that may form to drain itself away.

But, on the other hand, should the wound assume an unhealthy character, and a thin dark-coloured fœtid discharge issue from it, ulceration of the bone is indicated, which will require to be dressed with the nitric acid or some other similar lotion. This should be carefully applied to the diseased surface of the bone only, and only so long as the diseased action is found to be going on. Dry lint may now be applied to the part and secured by a compress.

As soon as healthy action in the wound and on the surface of the diseased bone is brought about, which is indicated by the character of the discharge, the plan proposed to bring

the parts in apposition should at once be resorted to, in order that they may more readily unite without leaving much blemish.

At the time the fracture of the orbital process of the frontal bone is produced, it is possible that the eye or some one or more of its appendages may be injured, and will require the attention of the veterinary surgeon. Such lesions, however, I do not propose to treat of on the present occasion. They would form an interesting theme to consider by themselves, or in connection with other diseases affecting this important organ.

Fracture of other facial bones than those already alluded to may come under the notice of the veterinary surgeon, but such occurrences are by no means common; and when they do take place, displacement of the fragments is, for obvious reasons, very slight.

It must be remembered, however, that should such lesions occur, important organs are likely to be seriously injured. If, for example, it should be the lachrymal bone that is fractured, the duct which passes through it and conveys the lachrymal secretion to the lower part of the nostril will be spoiled for that purpose. Under such circumstances, although the fractured bone may be repaired, the duct cannot; and the tears, as a consequence, will flow over the side of the face, causing an unsightly appearance.

Again, the superior maxillary bone may be fractured from external violence—such, for example, as a kick from another horse; and should such take place, and that in a line with a canal through which the superior maxillary division of the fifth nerve passes to reach the side of the face, the results may be very unfavorable. This nerve, which is wholly sensitive, may be much bruised, or great pain may be produced by its being pressed upon by a depressed piece of bone. Having in view the results that may accrue from such injuries to this nerve, will suggest the advisability of removing the cause as early as possible.

Having made the above remarks on fracture of some of the bones of the face, I will, in the next place, discuss a disease of somewhat different character, depending, nevertheless, upon external violence.

(*To be continued.*)

OBSERVATIONS ON THE CATTLE PLAGUE IN IRELAND AND THE CATTLE DISEASE IN THE ISLE OF MAN.

(*Concluded from* p. 882.)

The next case which was examined occurred at Peel, situated in the west of the island. One cow, it was ascertained, had died on Tuesday, May 29; another had been taken ill on the following day, and died on Friday night. On Saturday, June 2, the autopsy revealed the lesions identical with those previously described. The mucous membrane of the mouth was perfectly healthy, the lining membrane of the larynx was congested, and the membrane of the trachea, at the infero-posterior part, was nearly black from effusion of blood into the submucous tissue; in the bronchial tubes the colour was dark red, and the surface was covered with exudation. The lungs were emphysematous; the left ventricle of the heart was marked with large hæmorrhagic spots, the rumen and reticulum were congested, and the epithelium easily removed; the omasum presented the peculiar appearance to which so much importance was formerly attached as an indication of plague; there were numerous red spots on the leaves of the organ, and the ingesta existed in the form of hard plates, to which the epithelium of the membrane was adherent. The abomasum was intensely congested in patches, and there were numerous erosions particularly near to the pylorus; the folds in that part of the stomach nearest to the omasum were œdematous; and altogether the appearances observed in the viscus were not to be distinguished from those seen in many cases of undoubted cattle plague.

In the small intestines red lines were observed (zebra marking) which followed the course of the rugæ of the membrane, running parallel to each other, and occasionally being crossed by transverse lines. The large intestines were congested in patches, and the rugæ of the rectum were marked by dark red lines. The vagina was congested, but there was no creamy secretion, nor any disease of the surface of the membrane.

The contents of the intestines were fluid throughout, although the animal had not been affected with diarrhœa, from which the one that died on the previous Tuesday had suffered. There was also the usual congestion of the vessels of the brain, and effusion of sanious fluid.

It was ascertained that ten cows were pastured with the animals when they were attacked, and that up to the present no other cases had occurred among them; some calves, which had been in the same pasture up to the beginning of May, were also in good health.

At Kirk Andreas, beyond Ramsay, cases of the disease had occurred on Sunday, May 27, on which day a bullock was taken ill and died on the following morning at 7 o'clock. A heifer died on the next day at 7.30 a.m., and on the same day, in the afternoon, a bullock gave indications of being affected and was destroyed, together with another which had been isolated as a suspicious case, and which subsequently became delirious. A heifer which had been in contact with the bullock last attacked remained in health, as also did the rest of the stock on the farm, all of which had been with the sick animals up to the time when their illness was first observed.

On Tuesday, June 7, a case occurred at Douglass. A cow was taken ill and presented the usual symptoms. She was found in the morning standing with her head forcibly pushed against the wall; the pulse and respiration were quickened, the latter being accompanied with a moaning noise; the buccal membrane was pallid and free from eruption or abrasion; the mucous membrane of the vagina was also pale, and the temperature was 101·9.

The next day the animal was worse, groaning constantly; there was, however, no diseased appearance of the mucous membrane of the mouth or vagina; the temperature was 100.

On the day following it was apparent that the animal was dying; the hind extremities were in the erect position, but the fore ones were bent, and the cow was resting on its knees with the head on the ground, and in this singular posture it remained until its death, which took place during the night. The *post-mortem* examination was made on the following morning by the veterinary inspector, and the same morbid appearances which had been observed in the other cases were detected. Another and exactly similar case was examined on Tuesday, June 6, in the neighbourhood of Douglass, and on June 7 an instance of the same disease was investigated at Kirk Patrick. In this case the cow was pastured with two others upon the top of a mountain (Brid Sliewwallin), quite removed from all chance of contact with other stock; she had been observed to be unwell the evening before, the symptoms being loss of milk followed by delirium, and in the morning early she was found dead. The morbid changes which were seen upon *post-mortem* examination need not to

be described, as they were precisely the same as those which existed in the former cases.

The entire losses between the dates May 28 and June 7 amounted, according to the reports received, to 13 animals.

1 at	Port-e-Chee,	on May 28, killed.
1 „	Braddon,	„ May 31, died.
1 „	Marrown,	„ June 1, died.
2 „	Peel,	„ May 28 and June 1, died.
1 „	Rat Farm,	„ found dead.
4 „	Kirk Andreas,	„ May 27, 28, 29, 2 killed and 2 died.
1 „	Douglass	„ June 5, died.
1 „	„	„ June 7, died.
1 „	Kirk Patrick	„ June 7, died.

The simultaneous appearance of the disease in herds widely separated from each other in various parts of the island, was a noticeable fact, and one which was entirely opposed to the idea of infection. It was further ascertained that during a period of ten days from the first case reported at Port-e-Chee, there had been no extension of the malady to other animals with which the diseased ones had been herded; and in reference to the symptoms exhibited by the sick beasts, there was an uniform absence of those special signs of rinderpest upon which most reliance can be placed, and an invariable presence of others which are generally absent in plague. The lesions discovered upon dissection were also remarkable for their uniformity, while the morbid changes which are characteristic of plague vary in degree in nearly every case. The most remarkable alterations were always detected in the brain and third stomach; the mucous membranes of the mouth and vagina were in every instance free from those peculiar deposits which are so constant in cattle plague as to have received the name of pathognomic signs.

The entire evidence led to the conclusion that the disease was not rinderpest; and the question then presented itself—what is the precise character of the affection, and upon which causes does it depend? Positive answers to these inquiries are not so readily advanced as are negative statements; it is less difficult to decide what the disease is not than what it is. From inquiries which were made in different parts of the island, it appears that the malady has long been known as the "drying up" or the "grass disease," the first term referring to the dried condition of the ingesta in the omasum; the second to the supposed influence of the herbage in certain parts of the country. On the farm at Port-e-Chee, where the

first case was examined, the disease has been frequently observed to occur particularly in the latter part of the spring.

During the inquiry which was subsequently made in Ireland, this affection was frequently met with in different parts of the country; in the vicinity of Dublin several cases happened in the midst of large herds, and the affection is well known all over the land under the name of "grass staggers" or "dry murrain." Professor Ferguson designates it "congestive apoplexy" in reference to the invariable cerebral congestion which sometimes exists to an extraordinary extent. The affection is certainly congestive and not inflammatory, and in all the cases which were seen during life, the absence of any symptoms of fever as indicated by the thermometer was particularly remarked. The majority of the cases, however, are only examined after death, as the animals are frequently not observed to be ill until a short period prior to death, and very often indeed no suspicion is entertained of any illness until the beast is found dead in the field.

Some of the facts which we observed, both in Ireland and the Isle of Man, seemed to favour the idea of the herbage being the causes of the affection; for example, the circumstance of its greater prevalence in particular localities, and its sudden appearance when animals were removed from a poor to a rich pasture, as was notably illustrated in the north of Ireland in one instance of an ox which was taken from the land on which it had been pastured for some time and placed on a lawn where the grass was abundant, and where, after remaining for a day, the animal was suddenly attacked and died before any assistance could be rendered. The *post-mortem* examination, in this case, resulted in the discovery of those appearances which are uniformly indicative of this peculiar affection. A more extended acquaintance with the varying circumstances under which the disease occurs, tended, however, to prove that the herbage or character of the soil could not alone be referred to as exciting influences. On the poorest and on the most luxuriant pastures, on the lowest and wettest, as upon the highest and seemingly driest feeding-grounds, the malady occasionally appeared attacking one or two of a number of animals, all apparently existing under precisely similar conditions. On many of these pastures the prevalence of inferior grasses was apparent enough, but on other lands where the same disease occurred, the herbage was of average quality; and further, the fact of one or two animals dying suddenly, and a number of others remaining on the same ground in perfect health, is quite opposed to the conclusion that the disease depends upon the existence of any

deleterious plants, unless it be assumed that they are so sparsely distributed that only by accident an animal would consume them.

Everything connected with the malady is obscure, and all ideas that have been advanced in reference to its nature and causes are speculative; possibly by testing the validity of certain rational hypotheses the truth might ultimately be reached, and the cause being discovered, very considerable losses, especially in Ireland, be prevented. The frequent occurrence of this affection upon undrained land is a circumstance which demands careful consideration; it may be, that upon an examination of all the evidence which would be obtained during an inquiry, that the relations which apparently exist would prove to be accidental; but it is at least quite as probable that the condition of the soil would be found to be an essential element in the production of the disease. An exhaustive investigation must be undertaken in a spirit of pure inquiry, and with the knowledge that all the expenditure of time and money may be, so far as practical results are concerned, profitless. If those engaged in an attempt to elucidate an obscure subject feel that they are absolutely bound to arrive at a conclusion, there is an end to all fair and unbiassed examination of the evidence. The scientific inquirer who is pledged to decide a disputed question in a given time, is no longer a free agent, and his conclusions cannot be accepted as the results of legitimate induction. In many cases the most elaborate investigation does not elicit any facts upon which a conclusion can be based, and an opinion formed under such circumstances is of no more value than a mere hypothesis; it may be useful as indicating a new path of inquiry, but it can be of no importance as the expression of a positive truth.

The facts observed during the very limited time which the inquiry occupied in the Isle of Man, and subsequently in Ireland, where further opportunities of observing the disease presented themselves, do not point to any definite conclusion in reference to the causes of the malady or its precise nature. It is evident from the symptoms exhibited by animals suffering from the affection, that it is not a febrile disease, nor does anything in the evidence at present before us justify a suspicion of its being infectious. The most important element is the derangement of the brain and nervous system, upon which, in all probability, the fatality depends. The suddenness of the attack, the selection of one or two animals of a herd, and the remarkable uniformity of the lesions which result, are facts which suggest that some special agencies are

acting, but they do not indicate the direction in which the cause should be sought. The complete elucidation of the whole question in all its bearings would probably require the aid of the microscopist, the chemist, the botanist, and the pathologist. At present the affection has only been considered in its subordinate aspect in relation to the existence of rinderpest which it assimilates by the resemblance which exists in many of the morbid appearances of the two diseases, but from which it is distinguished by marked and well-defined characters.

In England, so far as our knowledge extends, the disease is unknown, and it is not improbable that it belongs to that class of affections which die out under the influence of an improved system of cultivation, to give place to others which in their turn suffer extermination, as the circumstances upon which they depend become modified: thus it will be until the conservation of the health of stock and the improvement of the soil are based upon the same principles; and agriculture and veterinary science recognise a common object.

HORSEFLESH AS AN ARTICLE OF DIET.

By W. Ernes, M.R.C.V.S., London.

The cattle plague which has prevailed for eighteen months in this country, and although now nearly is not yet quite extinct, has caused animal food of every description to be of an exorbitant price, which consequently makes it unattainable in sufficient quantity by the majority of the labouring classes, while the poor are obliged to go without it altogether, notwithstanding that animal food in our climate is of primary importance to the working classes. To the above we have now to add the fact that the harvest, not only in this country, but also in those countries from which we draw our usual supplies, is scanty and badly got in. It is therefore of vital importance that we avail ourselves of every means to increase the supply of animal food, one of which would be, without doubt, the introduction of horse flesh as an article of consumption, and, when once fairly established, it would be of immense advantage to the poor, and also the working classes.

Formerly the flesh of the horse was regularly sold for food, the same as that of the ox and other domestic animals, until its use was prohibited by Pope Boniface III. But notwith-

standing the interdictory bull of this Roman pontiff, it has nevertheless always been sold in the butchers' shops at Copenhagen and other towns of Denmark. These horse-butchers are under certain restrictions; for no horse can be slaughtered for human food unless previously examined by a veterinary surgeon, who brands it on the hoofs, which are to be left attached to the quarters until the whole of the carcase is sold. This is to prevent horses being sold for food affected with glanders, farcy, or other malignant diseases, or that have died a natural death. We visited one of these butcher's shops, established in Altona, in company with Professor Simonds, some years ago. We saw some of the meat exposed for sale, which seemed very good, indeed it might have been mistaken for lean beef. We also saw some horses ready for slaughter. The proprietor informed us that he had a good sale, but could not get a sufficient number of horses to supply his customers; that he would like to have some of the English horses which were sold at very low prices in Smithfield Market. Horseflesh is very savoury and nutritious. I have eaten it, and would often prefer it to beef if it could be had as easily. It is much better than the low price beef and mutton now sold to the labouring classes, likewise that which is made into sausages. Its price at the present time, raw, is not more than twopence per pound; and if regular butchers' shops were established, it would not exceed fourpence. Another advantage would result from the introduction of horseflesh as an article of diet, viz., the enhancing of the price of a certain class of horses which are not worn out or old, but are from accident and other causes rendered useless for work, and which are now sold, taking the highest price, for about two guineas. These would be worth at the lowest five times that amount; and the common saying of the horse eating his head off would no longer hold good. On the contrary, those same horses might be beneficially fattened for the purpose of slaughtering.

Whoever should be able to overcome the prejudice of the labouring classes against the consumption of horseflesh, and to introduce it as an article of diet, will be a great benefactor to the human race. The consequences of an insufficiency of animal food are too well known to need commenting on; and now that the winter is set in, the want of it is more felt, so that the boon consequently would be much greater.

We are getting up companies for every possible and impossible object; could we not form a company for the introduction of horseflesh as an article of diet? The late

Professor Renault, Inspector of Veterinary Schools in France, with Geoffrey St. Hillaire, and other members of the academy of France, laboured hard to introduce horseflesh as an article of diet; setting the example of eating it themselves, by giving horseflesh banquets. Their endeavours have been ultimately crowned with success in the establishing of horse-butchers' shops in Paris. These are regulated by an ordinance of the prefect of the police, as follows:

Article 1. The sale of horseflesh as an article of food is permitted in accordance with the following rules:

2. Horses destined for consumption are to be slaughtered exclusively in the slaughter houses especially licensed for that purpose, and within the jurisdiction of the prefecture of the police.

3. The sale or the exposing for sale of horseflesh for alimentation from any other places except those authorised, as indicated in the preceding article, is prohibited in Paris and the rural districts within the jurisdiction thereof.

4. No horses are to be slaughtered except in the presence of a veterinary-surgeon inspector appointed to that purpose by the prefect.

5. The horses are to be submitted to the inspector before the slaughtering, and also after they are cut up, likewise the viscera, so as to enable the inspector to judge of the state of health of the animal.

6. The meat cannot be removed from the slaughter house to the shop, or exposed for sale, until the stamp of the inspector has been applied to it; the manner of it to be decided by the administration.

7. To facilitate the verification of the meat when removed from the slaughter-house to the shop, the animals are to be divided either in halves or quarters, the hoofs being left on, and only removed on the retailing of the meat.

8. Horses considered unfit for alimentation. All horses that have died a natural death, or have been killed in a state of fever consequent on wounds, and those which are attacked by maladies of any kind, or suppurating sores, or abscesses, even in the hoofs. Also those horses which are in a state of great emaciation.

9. When there is a difference of opinion in reference to the state of the health of the horse to be slaughtered, or the fitness for food of the meat exposed for sale, an expert will be called in to act in conjunction with the veterinary inspector appointed by authority, and if the rejection of the meat is confirmed, the proprietor will be condemned to pay all expenses.

10. All horses and meat condemned as unfit for food are

to be sent to the knacker's establishment at Aubervillier's (a descriptive receipt to be given for it by the superintendent) at the expense of the proprietor.

11. The meat having been inspected, and the stamp of the veterinary inspector applied, it is to be conveyed immediately from the slaughter-house to the shop in a close carriage, unless wrapped up in a clean cloth, so as to leave no part exposed.

12. All establishments for the sale of horseflesh shall be indicated to the public by large letters on a signboard, or otherwise.

13. The hawking of horseflesh is interdicted, and it is not allowed to be sold, except in those establishments especially licensed for the sale of it.

14. The resturateurs and others dealing in eatables, selling horseflesh without declaring it, or disguising it, or mixing it fraudulently with other meats, will be prosecuted according to Article 423 of the penal code, or according to the law of the 27th of March, 1851, in accordance with the offence.

15. All contraventions to the above must be verified by *procès verbal,* which is to be transmitted to the prefect.

The following is from the *Avenir National:*—It is well known that a horse butchery was opened some time ago near the *Barrière d'Italie,* No. 3. Success seems to have attended this speculation. The aspect has nothing in it particular. The large quarters which are hung up, and the choice pieces on the tables for show, remind me by their appearance of beef exposed for sale. The fat is not very abundant, and is of a yellow colour, and the lean is like that of the ox, of a bright red colour. It appears like a butcher's shop where nothing but beef is sold. It is made known by law that it is not allowable to sell other meat in conjunction with that of the horse. The walls of the shop are decorated with a highly spiced sausage, the odour from which has nothing unpleasant in it.

The inferior pieces are sold at twenty-five centimes the half kilogramme, and the fillet (under cut psoas muscles) at one franc. The sausages are sixty centimes the half kilogramme, and it is said that there is a great demand for them. They are made with horseflesh mixed with that of the pig. The liver, lungs, &c., and the brain, are sold like the same articles in the regular butcher's shops. The animals are slaughtered in a slaughter house specially established for the purpose beyond the *Barrières.* A veterinary surgeon is appointed to verify the state of the health of the animals, and the meat is brought into Paris with the hoofs attached to

the quarters, which serve as a control or mark at the octroi. They are afterwards removed, and the meat is again examined before being exposed for sale.

As to the number of horses required to supply the business, there appears to be no fear, as the stable of the concern is well stocked. It seems that a certain number of proprietors prefer selling their horses when unfit for work to these butchers, rather than realise the small price they fetch in the horse market. In getting rid of a faithful servant in this way, they have the certitude that it will not be ill-used, nor over-worked, nor half-starved, for the remainder of its life.

From this source it is expected there will be always a plentiful supply, which will be notably increased by the already too great number of street accidents that occur in Paris.

We will only allude to the fear of *imaginary* maladies whenever the question of introducing a new article of diet is mooted. They have no better ground than this in reference to horseflesh. It is well known that the potato was likewise suspected at the time of its introduction. We may say more; the double inspection of the animal while alive, and of the meat after it is killed, has for its object the removal on this point of all fear and prejudice on the part of the public, and is a great advantage.

In a purely scientific point of view, we consider it to be superfluous. It suffices that the flesh of an animal be well cooked to be without any of those dangers which seem to be apprehended. The only individual so exposed in the case of horseflesh, the same as in that of the ox, is the butcher himself. We do not think that horseflesh will ever be destined to become a choice dish; but this is not the view to be taken of the question. The opening of the horse-butcher's shop is an alimentary progress, not a culinary one. Meat that possesses the same nutritive qualities as beef, and makes as good a broth as that made by that of the ox, is introduced as an article of diet in a populous and ill-favoured part of Paris, and is 50 per cent. cheaper than beef, must be of great importance.

We have been able to satisfy ourselves that the shop is well attended with customers who would be unable to procure, from want of the means, any animal food in the ordinary butchers' shops.

The use of horseflesh seems to be a real benefit and a very important element in the alimentation of the poorer classes of the people, and therefore deserves to be recommended.

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 885.)

I have asserted that *action* is the main assistance to the discovery of disease in the hock-joint. The same remark applies to the fore limbs. It is usual with some judges of horses to exclaim, when they observe an animal standing with one hock flexed, that disease is present in that joint. At first there appears some reason for making the assertion, but the proof is wanting. My attention has, scores of times, been called to this habit. When we reflect upon it, it seems reasonable to suppose that the hock would not assume that position unless it had the effect of relieving either it or some other portion of the limb from some uneasiness (perhaps pain). With a view of assisting our judgment in these cases, it is but fair to call to our aid some of the habits of man. It is not an uncommon thing for us to flex the limbs when at rest; first one, then the other; indeed, both superior and inferior extremities are treated in the same fashion by some persons. If a man is found waiting any time for another, or if standing at a desk, writing, or listening to a public speaker, or under any other circumstances, he will occasionally shift the position of his nether limbs; but this is no proof of disease being present, nor is it a proof that a horse has spavin or any other affection of the limb because he is known to do the same. There are many habits witnessed in horses which are not understood by every one. What can be said of a horse dragging his toes upon the ground during a slow trot, or even in the walk? If we examine the hocks, nothing abnormal can be detected. The examiner may stand close to the hind quarter, and look in front of the patella, and cast his eye over to the opposite side; he may look behind the legs; he may stand in front of the animal, and, with a stoop, look between the front limbs, on towards the tarsi, yet no disease is seen. He may assist his eyes with his hands, by manipulating the part, and still nothing is revealed. Then, it may be asked, what can be the reason that the action of the animal is what I have hinted? Although nothing is seen or felt, there must be some cause in operation. It is not proper action; and yet, how often do we see animals with this kind of action passed as sound ones! This peculiarity is explained by

the fact of disease being present, to a greater or lesser extent, in the hock-joint. How can this be proved? It is not enough for an examiner to assert that an animal is unsound, unless something can be shown to the owner which constitutes unsoundness. He would not accept that peculiarity of action which I have attempted to describe as a mark of unsoundness. The owner of a horse requires something more tangible than this; nevertheless, the opinion would be correct. It would not satisfy either the seller or buyer to parade a number of dried bones as examples, because these persons would urge the fact of the bones not being those belonging to the animal in dispute. But it affords the examiner great scope for any observations he may wish to make with a view of strengthening his opinion; especially if he can produce a joint with which he was familiar during the life of the animal. On looking at the various joints, or articulations, in the tarsus, it becomes necessary to study those parts, not merely as anatomists, but as mechanics. I fear we are too prone to look superficially into these matters. It is generally supposed that if a student makes himself acquainted with the structure of a part—that is to say, if he can repeat the names of the bones and their relative situation, entering into the composition of a joint; mention the articulation that each bone possesses. and can state to which order each belongs—he is pretty well up in that part. Now, nothing is further from a knowledge of the functional arrangement of the hock-joint than this. It is a good preliminary, there is no doubt; but the student of nature not being acquainted with more than this superficial knowledge of the living organism, will find that in practice his acquirements are yet but few. I would urge every worker in the veterinary profession to study the mechanical arrangement *as a mechanic* is known to do, and he will soon be able to grapple with some things which are not known to the world at large. I am, perhaps, stepping out of my way in making these remarks, yet it will be understood by all who may chance to look over these observations, that I do not wish to be looked up to as a teacher of physiology. The main object in offering these observations is to direct more attention to the subject than I have reason to know it has hitherto received.

What makes a horse valuable? Not his shape surely! Many handsome horses are on view, but what of their action? The handsomest horse ever foaled without action would be looked upon as a mere *flat* catcher. It is action which will sell a horse to a judge. Many an ugly brute is not worth

a score pounds by his appearance: is worth five times that amount when seen to go. It is not the handsome horse which realises five hundred as a hunter. It is the action which he possesses in crossing the country. It is not a *handsome* horse that will trot his sixteen or seventeen miles an hour in a buggy; it is the horse with action. It may be asked, what kind of action is it which will command so much money, and so much admiration? It is not sufficient for an animal to *look* well made and be well proportioned. Very few of us, with all our knowledge of the anatomical arrangement of the animal, are capable of stating to a nicety what action he possesses from appearance only. We may, and do sometimes, make a tolerably good guess after looking a horse over. It is often remarked that such a one *ought* to go. It is a very common thing to meet an animal with fair front action and defective hind action, and *vice versâ*. Of the two, as a roadster, it is preferable to select one with fair front action than the reverse. But in choosing an animal for the field, I should select the one with the best hocks, not paying so much attention to his front action.

(*To be continued.*)

RUPTURE OF THE DIAPHRAGM OF LONG STANDING.

By D. B. Howell, M.R.C.V.S., Reading.

As it is generally supposed that rupture of the diaphragm is followed either by immediate death or death soon after the infliction of the injury, perhaps the following remarks may prove interesting.

May 17th, 1866, I attended a blood stallion, the property of P. Lediard, Esq., of Reading, named "Hobbie-noble," who ran fourth in the Derby of 1852, Daniel O'Rourke's year, and realised as a two-year old 6500 guineas.

I found him evincing symptoms resembling those that are met with in these peculiarly low typhoid forms of influenza which occasionally occur, and which, as a rule, defy all treatment.

Suffice it to say that in a few days the animal died, and as I always make it a rule of having *post-mortem* examinations of all fatal cases, I had the carcase removed to my yard for that purpose, not considering it politic to do it where the

horse died, in consequence of several valuable brood-mares being there heavy in foal at the time.

I found the respiratory organs in just such a state as I had anticipated, but the diaphragm was rent in three places. Longitudinal slits, or rather long ovoid openings, existed in its tendinous portion, two to the right of the foramen sinistrum, about three quarters of an inch apart and nine inches long; the other to the left was about eleven inches long. The edges were perfectly cicatrized and thickened to six times their normal structure.

I showed the morbid specimen to an eminent member of the medical profession who happened to call on me during the time I was making the examination, and he considered the case to be unique, and agreed with me that the lesions were of long standing.

A portion of the small intestines protruded through the single opening, yet there was not the least appearance of inflammation or strangulation present. But in all probability there was more of the intestines in the thoracic cavity during life than at the time of examination, as the carcase was placed nearly upright in a knacker's cart, and the tendency of the bowels would necessarily be to drop downwards. The question then arises, When was the injury inflicted? On inquiry I found that about a twelvemonth previous, and before the horse came into Mr. Lediard's possession, in the act of copulation he reared up, and fell backwards. Nothing remarkable was noticed at the time, or even afterwards, except that when covering he did not work vigorously, but laid upon the mare as though incapable of performing the act. The probability, in my opinion, is, therefore, that from his position the protruded bowels were so pinched by the contraction of the diaphragm, and thereby from the pain produced he was unable to perform the necessary motion. He never once showed any symptom of abdominal pain, nor sat on his haunches. This sitting up must not, however, be considered an infallible indication of rupture of the diaphragm or of the stomach, for about four years since, whilst attending a horse with enteritis for Mr. Hutt, job-master of Reading, that animal sat up twenty-six hours, and then recovered. H. Bird, Esq., also had a large cart mare that was frequently the subject of enteritis, and who always sat up an hour or two at each attack.

I have met with several cases of rupture of the diaphragm, one during the present week, all of which were suddenly fatal, except in a chesnut mare, who, in jumping a bank, slipped into a ditch, and died within twelve hours. The

division between the thorax and abdomen in this instance was almost entirely destroyed.

I had proceeded thus far with the history of these cases, when I received the *Veterinarian*, containing Mr. Greaves' case of rupture of the diaphragm; in fact, it was quite a question that the October number did not contain this report instead of that of cancer and amputation of the penis.

In the case first given I consider we may fairly judge as to the time when the injury was inflicted. That nothing unusual was observed during life in the respiration, except at the last fatal illness, I am convinced of, as I particularly asked that question of the stud-groom, who is an intelligent man and conversant with horses. Moreover, I had myself frequently seen the horse during the time he was in Mr. Lediard's possession.

ON THE APPOINTMENT OF INSPECTING VETERINARY SURGEONS IN INDIA.

By "Beacon," India.

Herewith is the last amended form of the Royal Warrant, as declared to be applicable to the veterinary surgeons of both services—the Queen's and Indian services—in this country, by which it will be seen that the pay of both has been increased, and placed on the same footing.

The six senior veterinary surgeons of this presidency (Bengal), viz., Isaac Bicknell, Esq.; H. C. Hulse, Esq.; A. C. Williams, Esq.; John Siddall, Esq.; Archibald Turnbull, Esq.; and William Johnson, Esq., have been promoted to first-class veterinary surgeons without examination, as they entered the service previous to 1848. With respect to the amalgamation of both services, as contemplated, and to which allusion has been made in the last paragraph of the order published, only seven veterinary surgeons out of upwards of thirty in the list of the three presidencies have gone over to the Queen's service, viz., First-class Veterinary Surgeon William Johnson, late Bengal Establishment, gazetted to the 20th Hussars; Veterinary Surgeon Barlow (Bombay), to the Royal Artillery; Veterinary Surgeons R. W. Murray, J. G. Bushman, Henry Bath, S. J. Goddard, and John Field (late Bengal Establishment). Mr. Bushman is posted to the 21st Hussars; Mr. Field, as well as the

others above named, have been posted to the Royal Artillery.

One portion of the warrant (para. 5) caused a greal deal of confusion at one time, viz., "From the date of the commencement of these allowances all extra allowances, of whatever description, will cease." Thus when a veterinary surgeon was placed in extra charge of Government horses other than his own special charge, he was entitled to "head-money," at the rate of two annas a head for each horse, or £1 5s. per hundred horses per month, but which this order did away with. However, another and more recent order has been published in reference to this subject, by which it will be seen that the original allowance or "head-money" is still paid to all veterinary surgeons holding "extra charges," *et seq.*

"*Military Department*, 1866.

"Fort William, 12th February.—With rereference to Government General Order No. 504 of the 22nd May, 1865, it is hereby notified that, when a veterinary surgeon with a regiment of British cavalry is placed in charge of horses of a battery of artillery or of horses of other regiments, he will be allowed the usual head-money of two annas per horse; but this allowance will not be made to a veterinary surgeon with a wing of a regiment of cavalry, unless the aggregate number of horses under his charge exceeds 490, the complement of a regiment.

"Veterinary surgeons of the Royal Artillery will be required to attend all the artillery horses at the station, irrespective of their brigades or batteries, without any claim to head-money for such duty."

Within the last month a fresh order likewise has been published on this subject, in which the number of horses is reduced from 490 to 440, and a veterinary surgeon of the Royal Artillery, placed in extra charge of cavalry horses, will draw "head-money" for all the horses under his charge *beyond* 440. The two annas per horse, allowed also for "bazaar and country medicines," per month, for each horse under the veterinary surgeon's charge, is quite independent of the "head-money" above alluded to; and this has been always paid to veterinary surgeons out of the two rupees per horse monthly, allowed by Government to officers in command of batteries and troops.

Herewith I have also the pleasure to send you the appoint-

ments made by Government recently as inspecting veterinary surgeons.

"With reference to G. G. O. No. 934 of this date, His Excellency the Governor-General in Council is pleased to make the following appointments:—

"Veterinary Surgeon, 1st Class, R. J. G. Hurford, 7th Dragoon Guards, to be Inspecting Veterinary Surgeon and Principal Veterinary Surgeon in Bengal.

"Veterinary Surgeon, 1st Class, J. Siddall, Bengal Veterinary Department, to be Inspecting Veterinary Surgeon.

"H. K. BURNE, Lieut.-Col.
"Secy. to the Govt. of India."

"*Copy of Standing Orders, India.*

"ROYAL WARRANT.—VETERINARY SURGEONS.

"G. G. O. No. 504, 22nd May, 1865.

"With reference to G. G. O. Nos. 363 and 364, dated 30th March, 1860, the Right Honorable the Governor-General in Council is pleased to direct the publication of the following paragraphs of a letter from the Right Honorable the Secretary of State for India, No. 109, dated 7th April, 1865, and to notify that the increased allowances therein authorised are to have effect from the 1st May, 1865.

"Para. 1. With my letter dated 24th November, 1859, No. 412, I transmitted to you copies of a royal warrant dated 1st July, 1859, regulating the rank, pay, promotion, and retirement of Veterinary Surgeons of Her Majesty's British forces; and I directed that such parts of the warrant as related to relative rank and precedence should be made applicable to the Veterinary Surgeons of Her Majesty's Indian forces. At that time it was not considered expedient to alter the existing regulations affecting the pay and allowances, or the conditions of invaliding and retirement of this class of officers.

"2. Consequent on the recent extension to medical officers of the benefits of the rates of pay and allowances fixed by the Royal Warrant of 1st October, 1858, for the Medical Officers of the Army, I have had under my consideration in Council the subject of the allowances drawn in India by Veterinary Surgeons of the British and Indian Forces respectively.

"3. Your letter, dated 21st December last, No. 470, also drew my attention to the present scale of pay to Veterinary

Surgeons in India, which is stated to be relatively much less than that granted in England and the Colonies.

"4. It appears to me that the time has now arrived at which other provisions of the Royal Warrant of 1st July, 1859, may be introduced into India, in addition to those specified in my letter of the 24th November, 1859, above referred to.

"5. It has been accordingly resolved that the rate of pay laid down in the Royal Warrant with the Indian allowances of the relative rank of the Officer, shall for the future be adopted as the scale of pay for Veterinary Surgeons of the British and Indian forces.

"From the date of the commencement of these allowances all extra allowances, of whatever description, will cease.

"6. The rate of pay of Veterinary Surgeons of both services will then be as follows:

Rank.	Years' Service	Relative Rank.	Pay—Full Batta.
			Per Month.
			R. a. p.
Staff Veterinary Surgeon	25	Major	976 9 6
" " "	20	"	964 6 8
" " "	15	"	952 3 10
Veterinary Surgeon 1st class	25	Captains	627 2 0
" " "	20	"	590 9 7
" " "	15	"	572 5 5
" " "	10	"	560 2 7
" " "	5	"	535 12 11
Veterinary Surgeon	25	Lieutenant	426 3 2
" "	20	"	426 3 2
" "	15	"	426 3 2
" "	10	"	414 0 4
" "	5	"	395 12 3
" "	under 5	"	377 8 0

"7. Veterinary Surgeons of the Indian Service will hereafter receive pay while on furlough according to the following scale:

Rank.	Years' Service.					On appointment.
	25	20	15	10	5	
	£ s. d.	£ s. d.	£ s. d.	s. d.	s. d.	s. d.
Staff Veterinary Surgeon . .	1 3 0	1 2 0	1 1 0			
Veterinary Surgeon 1st class	1 0 0	0 17 0	0 15 6	14 6	12 6	
Veterinary Surgeons . . .	0 14 0	0 14 0	0 14 0	13 0	11 6	10 0

"8. Veterinary Surgeons compelled to leave the service on account of ill health, and entitled to half-pay pensions under present regulations, will be allowed the Indian rate of half-pay of their relative rank, as laid down in the Royal Warrant of 1st July, 1859.

"9. Veterinary Surgeons of the Indian Medical Service will be allowed to retire on the following pensions, on completion of the required periods of service.

After 20 years' service, £200 a year.
„ 25 „ „ 250 „
„ 30 „ „ 300 „

"10. The amalgamation of the Veterinary Surgeons of the British and Indian Forces being contemplated, no further alteration in regard to the position on retirement of the Veterinary Surgeons of the latter forces appear to me to be at present called for."

THE DESIRABILITY OF THE VETERINARY MUTUAL DEFENCE SOCIETY.

By G. Morgan, M.R.C.V.S., Liverpool, Hon. Sec. to the Society.

I have on several occasions been asked by my professional brethren, "What use is there for a Mutual Defence Society?" Surely, they say, no one would ever attempt to impose on a veterinary surgeon, and endeavour to make him pay for injuries that he never caused; and if he caused these injuries, either wilfully or through his negligence, he ought

to pay. With the latter part of this statement I most cordially agree; but that there are cases in which an attempt is made to *legally rob* veterinary surgeons is equally as true. As an instance of this has occurred here in Liverpool lately, and was tried by jury at the Court of Passage, before Attorney-General James, Q.C., M.P., Assessor, on the 30th October, I cannot do better than relate it, and accompany with it the very careful summing up of the learned assessor.

Madden v. *Hayes.*

The plaintiff, B. Madden, sued G. Hayes, veterinary surgeon, for the sum of £80, for damage done to his horse, and for loss of time, caused by the defendant or his servants by pricking the said horse in shoeing, on the 24th of January last.

B. Madden said he was the plaintiff in this case; he was ill, and did not see the horse from the time it was lamed till the month of April, when he saw her at Haye's, and when requested to take her away he would not do so. Considered the mare to be worth £30.

Cross-examined.—Could not tell her age. Bought her at Lucas's repository.

James Carrol, examined.—I am a carter, and have been in the employ of the last witness for about eighteen months; remember taking the mare to be shod; never had her shod at any other shop except G. Hayes'; took her back on the 10th of February, because I thought she was pricked; had the shoe pulled off by one of the blacksmiths named Brannan, who said the shoe was tight; he altered the shoe, and put it on again; brought the mare again next day, and had the shoe again taken off by the same man. On this occasion a more careful examination was made, and a stump found, which was pulled out of the foot by Mr. Hayes's assistant from under the coronet. The shoe was again put on, when I took her home; brought her back next day, and left her. She was lame for three months.

Cross-examined.—It was the near fore foot she was lame upon. *The wound was on the inside, and the stump was on the opposite side—the outside of the foot.*

James Brannan, horse-shoer, was in the employ of Mr. Hayes in February last; remember the plaintiff's mare; remember altering the shoe. On the second examination I found a stump in the foot; pointed it out to Mr. Bird, who pulled it out.

This was the case for the plaintiff.

G. Hayes, veterinary surgeon.—I am the defendant in this

case. I remember Madden's mare; remember examining the foot in February last very carefully; found nothing in the foot. The mare evinced pain on the iuside, about an inch and a half above the coronet. The mare was left at my place, treated in the usual manner, and in three or four days a slough came from the spot I have already indicated; the mare got well, but the plaintiff refused to pay his bill or take her away unless I compensated him. This was the first time I heard anything about the mare being pricked, or of any nail being taken from the foot.

Thomas Bird, examined.—Am an articled pupil of Mr. Hayes's. I remember Madden's mare; examined the foot, and could find nothing amiss with the foot; pulled a stump out of the foot; a piece sloughed out some time after, on the inside above the coronet. The mare was bad about three months, but got quite well. The stump was on the outside, the wound on the inside.

John Smith, veterinary surgeon, was assistant to Mr. Hayes in February last; remembers Madden's mare coming to the forge lame; examined the foot carefully, and is certain there was no injury from the nails; remembers seeing a stump on the outside quarter of the foot; it was not near the sensitive part of the foot. The injury could not have arisen from the stump; it was on the opposite side.

Mr. Thomas Proctor and Mr. George Morgan, veterinary surgeons, Liverpool, also gave evidence for the defendant, after which the jury were addressed by counsel on both sides,* and the Judge summed up as follows:

Gentlemen of the jury,—This action was brought by Mr. Madden to recover damages from the defendant, which, he says, he has sustained by reason of the defendant's never having, by pricking, as it is commonly called, his horse while shoeing it, caused the injury and damage in question. Undoubtedly, if the defendant. in the exercise of his business as a horse-shoer, does prick a horse and cause a damage to the owner thereby, he is responsible to the extent of the damage which he has caused, because horse-shoeing, like any other business or occupation carried on by a man, is supposed to carry with it due care and due skill in the exercise of it, so as not to cause any injury. The law is perfectly plain and obvious, and it is this, that the man who causes an injury should compensate the man whose property he has injured. The question here which you will have to consider is, Did the defendant, by pricking the horse whilst shoeing it, cause this extensive mischief? If he did he is responsible; if he did not in your judgment, of course he is not responsible. Now, gentlemen, from the facts as they have been proved, it is quite clear that on the 24th of January the horse is shod; it is equally clear that on the 1st of February there is the removal of one shoe;

* Counsel for the plaintiff, Dr. Cummins; for the defendant, Mr. Littler; instructed by Mr. Cobb, solicitor, Liverpool.

it is equally clear that upon the 11th of February the horse was lame; it is equally clear that upon that day the horse was taken to the defendant's, and was examined. They could find then no cause upon which they could fix with certainty as to what the lameness was owing to; but the man who shod her, finding it was a little tight, removed and altered the shoe, and then replaced it, and he says, "I thought that might have accounted for the lameness." The horse went away, and the next day she is brought again. Then the shoe is again removed, and they make a more careful examination. The man then comes upon an old nail. There is no doubt from the evidence that that nail appears to have been a shoe nail. It appears to have been broken off. It is described, and there is no doubt upon that, as being upon the outside of the fore foot. At that time, undoubtedly, from the evidence, there was no suggestion made by anybody that the lameness was caused by a prick from that nail. Nothing was said about it then—nothing in the world. The nail is taken out; the shoe is replaced; the poor animal is endeavoured to be worked again, but it is quite clear that from some cause or other the animal was so lame as to be unable to do anything, and was laid by for two or three months. Now, the question is whether or not you are satisfied by the plaintiff's testimony or that of his witnesses, because he must prove it, that this lameness is clearly to be attributable to the prick caused by the nail; because, if he fails to show that to your clear satisfaction, he is not entitled to recover. Now, you have heard the observations made upon both sides, and you have heard the remarks made by the learned counsel for the plaintiff upon his not calling the testimony of veterinary surgeons. He says, "Well, it would be absurd for me to call veterinary surgeons, because you know they would all be against me." Well, that is an assumption against himself. He assumes that every veterinary surgeon who might be called would give the same evidence as those that are called. Well, that is not in his own favour. And he says likewise, "It is very extraordinary that Mr. Hayes should not have examined more correctly the precise spot where the nail was taken out." Mr. Hayes examined the foot carefully, he says, at the bottom of it, but found nothing the matter with it. But the learned counsel says, "Why didn't he examine that precise spot?" Perhaps the answer to that might be, that no one ever complained at that time that the lameness was attributable to the nail; therefore, why should he examine it? Now, as I said before, there is no doubt in the world but that the nail was driven in in the outside—you have had it described to you—and that the tenderness which was exhibited upon the 11th of February was in the inside, an inch or an inch and a half above the coronet, which is above the hoof a little. Now, the next question is, Are you satisfied that a tenderness appearing there necessarily—because it comes to that—necessarily must be attributable to the nail? That is the question, because if it is not to be attributed to that, and the plaintiff must establish it, there is no fault on the defendant. How it is caused is not for the defendant to show. It may be caused by a blow; it may be caused by a blow from a stone or from anything else; it may be caused, not by repeated treading, but by the horse having kicked itself on one occasion merely. But this is not what you are to examine. You are not to beat about to find out what did cause this other than the nail. Your attention must be directed to the question, Did the nail cause it? Because if it didn't, it is immaterial how it was caused, so far as this case is concerned. Well, now, it is true that the carter says this in the first instance, and it is strongly pressed upon you by the learned counsel for the plaintiff. "We found the nail near the wound." But he was asked, How could that be when there was

no wound? "Oh, no," he replied, "but where the wound afterwards proved to be." Well, take it so. When he is cross-examined he said, "The injury was on the near fore foot; the nail was on the outside, the wound was on the opposite side just above the coronet." And he said, "That caused the injury." I do not profess to have any knowledge upon these matters, and I do not mean to say that common sense always must prevail, but it naturally occurred to me at the time when I wrote that down, "Why, if a nail runs into the quick it causes an injury; where would it be likely to cause that injury? On the parts upon which it infringes, would it be likely to inflame those parts? One would think it would. One would think that tenderness would be exhibited there, and that inflammation would end in suppuration, and that matter would come out from that part. But there was no evidence given of that. There was neither tenderness there nor suppuration. There was no evidence of any inflammation there, but the inflammation was upon the opposite side above the coronet. Well, now, apply your minds to that. Always attend to the evidence which is given by men whose experience ought, so far as you think it desirable for consideration, to guide those who want experience in such matters. All the veterinary surgeons say this. Wherever there is a prick it is universally the case that the first appearance is in the immediate locality of the prick. That in their experience they have never known an instance where a prick having taken place, the tenderness is exhibited on the opposite side of the foot. You are to judge, gentlemen, on the evidence given on the one side and on the other, whether or not that old nail which appears to have been in the hoof, and does not appear to have been in the quick then, or to have caused anything in the immediate locality at that time, whether you must attribute to that old nail so in the hoof the injury which appeared at a very distant part on the coronet on the opposite side. If you think that it did, if you are satisfied upon that point, of course the plaintiff will be entitled to a verdict, because it will have satisfied you that the defendant's man improperly drove the nail in, and thereby caused the mischief. But if, on the other hand, he has not satisfied you, and you think that the better evidence is that such a nail was introduced, exhibiting such appearances when contrasted with the tenderness on the opposite side of the foot, which, as the evidence on the part of the defendant shows, could not by possibility have been attributable to that, but must have been caused through some mischance of another character; if that be your view, then, of course, you will find a verdict for the defendant. Now, gentlemen, I do not think I could assist you by reading all the evidence; I have given you the substance of it. If the plaintiff has made out his case to your satisfaction, you will give such damages as you think he is entitled to for the injury done to his horse. Why, he said the horse was worth £30, but he has got the horse, and, strange to say, his counsel never put the question to him, what is the present value of the horse after the injury which he has sustained. All that he is entitled to receive would be the depreciation of the value. But the learned counsel does not put that question, and says that the horse is utterly worthless; in fact, as he said, "worth nothing but the skin." Now, on the defendant's part, it is shown that the horse was sent away sound and well, as well as ever it was, and that so far from its being worth £30, it is not worth more than £12 or £15. Gentlemen, you are to judge which side is most entitled to credit, and give your verdict accordingly.

The Jury at once gave a verdict for the defendant.

Such a case as the above shows the risk that veterinary

surgeons run, and how they are at the mercy of litigious clients. Had the defendant in the present case been a poor man, he would in all probability have paid a sum of money rather than risk the chances of the law and the opinions of enlightened jurymen, as it is well known they are generally in favour of the plaintiff. I may state, for the honour of the profession, that although two members were offered their own price to attend and give evidence for the plaintiff in this case, they declined the offer when they were made acquainted with the merits of the case.

The Defence Society has not been established to encourage litigation; on the contrary, its promoters will only resort to the law as a last resource, after every other honorable means has failed. Their motto is "Defence not defiance;" but that there are cases where veterinary surgeons have been robbed by the aid of legal machinery, and that such a society is necessary for the protection of their interests, must be patent to the minds of the majority of the members of the profession; and I do trust they will support the movement which has been so auspiciously begun.

TUMOUR IN THE HEART OF A HEIFER.

By C. Houlden, M.R.C.V.S., Spilsby.

Dear Sir,—I have this day forwarded to you the heart of a heifer, having a large tumour, about the size of a hen's egg, situated in its left ventricle, and also a portion of the spleen and a kidney of the same animal, in which similar deposits will be found. The heifer was about three years old, and belonging to an extensive agriculturist in this neighbourhood.

Thinking these morbid growths might be interesting if laid before the members of the veterinary medical association, I will endeavour to give you a brief history of the case. The animal was noticed some months back to be falling off in condition, but not so much as to create any alarm. The owner thinking that it might be the result of a slight cold, sent her out to grass with a calf sucking her. She seemed to graze pretty well, and to eat all the cake she was allowed, which I think was about half a cake per day. Still, however, she continued to fall off in condition.

I was called in to see her on September 24th, when I found her low in condition, and very excitable, having an anxious look, but still eating a little. The pulse was about 120° in the minute, and it did not become less on my remaining quiet by the animal's side for some time. It was very feeble, at times intermittent, and made a kind of jerking impression upon the finger, as if the heart was labouring to overcome a burden beyond its power to remove. The respiration was rather quick and irritable, and performed at times with a grunt. There was a peculiar twitching of the abdominal muscles about the flanks and hinder extremities. The animal was very lame of one hind leg; the visible mucous membranes were of a pallid hue; the extremities, ears, and horns warm, and she had a nice dew upon her nose; the evacuations were healthy, and the animal generally laid down. On applying my ear to the side, and listening very attentively, I could hear a thumping, gurgling sound, with slight crepitation of the lungs.

Considering the history of the case and the condition of the pulse, I came to the conclusion that the heart and lungs were affected, and I told the foreman in charge that it was a doubtful case. I gave a slight dose of cathartic medicine, and left some tonic drenches; also applied a mustard cataplasm to the chest.

I saw the animal again on the 27th, and found her in the same condition as to the pulse and respiration. The twitching of the hinder extremities had increased, the animal was much more excitable, and had scarce eaten anything since I last saw her. She consequently looked remarkably thin. I ordered some gruel to be given her, and kept as quiet as possible; applied a blister to the chest, and continued the tonic medicine; but I told the owner I thought I should not see her again, feeling confident the animal would die. I was, however, called to see her on the 29th, as the owner was frightened at the cattle plague, and he wished me to see her again. I at once had her killed, and on making a *post-mortem* examination I discovered the morbid parts I have forwarded to you. The lungs were congested, and about one gallon of fluid was in the chest. All the other organs appeared to be healthy, with exception of the liver, which was enlarged, softer in texture than natural, and studded in parts with similar deposits as exist in the kidney. The blood was remarkably thin; indeed, it was remarked by the man that it was so thin as not to colour his hands.

Will you kindly favour me at your leisure with your opinion of the case, and the nature of the tumours, and if

you think it of sufficient interest, give it place in the pages of the *Veterinarian*.

Yours very truly.

To Professor VARNELL.

REMARKS BY PROFESSOR VARNELL.

In commenting on the above case, I may at once state, that although I have taken some trouble in investigating the morbid specimen, both microscopically and otherwise, I have, nevertheless, entirely failed in arriving at any satisfactory conclusion as to its true pathological nature. I have never seen a similar case, nor met with a description of an analogous one in the literature of bovine diseases.

The parts sent to me consisted of the heart, one kidney, and a portion of the spleen, stated to have been taken from a three-year-old heifer. In the left ventricle of the heart I found the tumour adverted to in the preceding letter, and which, as there stated, was quite as large as a full-sized hen's egg. It was connected by its base to the septum ventriculorum, from which it projected at a right angle, its summit pressing against the outer wall.

Judging from the appearance of the tumour, it must have first commenced beneath the endocardium, but as it increased in size, this membrane gave way, and the tumour, now uncovered by the serous membrane of the ventricle, gradually increased in magnitude; but from what source it directly received a supply of material to effect this I cannot understand.

In making a section through its centre, and on examining the cut surfaces, it was found to be made up of a number of strata of equal thickness, seemingly as though they had been formed by a deposit from the blood, which must have constantly bathed the surface of the tumour from the time it ceased to be covered by the endocardium.

Such I should have concluded was the way the tumour had been formed, had not many others that were actually in the muscular substance of the heart, and therefore not capable of being increased in size by such a mode, been similarly stratified.

The material of which the tumour was made up consisted of dirty-white, soft, friable matter, having no blood-vessels or other structural organs in any part of its substance. The walls of both ventricles and auricles contained numerous deposits of the same soft, friable materials, varying in size from a pin's head to that of a large-sized pea. The muscular tissue of the heart was pale and flabby.

The corticle substance of the kidney was thickly studded with the same description of deposit, which also varied in size, but I did not detect any in the tubular portion of the gland.

The spleen was similarly affected as the kidney and heart, but the material was not deposited in such regularly formed masses as in the other organs. This difference may be owing to the peculiarity of the structure of the spleen.

The blood is stated to have been thin and almost colourless—a phenomenon difficult to account for; but in studying cause and effect, this fact, if fact it is, should not be overlooked, for it is possible that it bears some important relation to the origin and formation of the tumours in the ventricle and walls of the heart, spleen, and kidney.

The peculiar character of the pulse of the heifer is to my mind more easily interpreted. It was highly diagnostic of structural and consequently functional disease of the heart; but precisely of what nature must have been altogether conjectural.

I refrain from attempting to account for the disease, or to explain its pathology; but I hope the above brief remarks will, in some measure, serve as incentives to further research into the nature of similar maladies.

The specimen was laid before the members of the Veterinary Medical Association, and although but little discussion was elicited by it, nevertheless it excited considerable interest.

CASE OF HYDROPHOBIA IN THE HORSE.

By S. Bignold, Assistant to H. J. Batt, M.R.C.V.S., London.

I hope the following, although but a brief, and, I fear, not a very explanatory history of a case which recently came under my notice, may not be unacceptable to your readers. Three similar cases have occurred to horses, the property of the same person, within the last six months. I am, however, sorry to say that illness prevented me from attending to only the last of the three. The former two cases I am told resembled all the symptoms presented in this latter case; and to confirm my diagnosis, I was informed that a dog that had died of rabies had been seen about last Christmas, on several occasions, to snap at and bite the horses' legs.

On August 26th, I was requested to see a grey mare, eight

years old, the property of Mr. Ram, Islington. Upon my arrival he informed me that his attention was drawn to the mare on the previous day, when she was noticed to be breathing laboriously and off her feed. Thinking that she would get better if allowed a day's rest, she was not sent to work. However, on the following day, as she appeared worse and very much excited, they endeavoured to administer a fever drink, and whilst they were in the act of doing so, she bit the neck of the bottle completely off, wounding her mouth considerably, and causing the blood to escape freely to the amount as near as could be guessed of two gallons.

The proprietor becoming alarmed immediately sent for me. I found the mare tied up in the yard apart from the other horses, seizing and snapping at everything that came in her way. From her excited state I had great difficulty in taking the pulse, which was very weak, and numbered about 60 beats per minute; the extremities were of the natural temperature, the abdominal muscles trembled, and the respiration was slightly quickened. I requested that some water might be brought and offered her. Upon its being presented, she was seized with a violent trembling, plunged her nose into the bucket, but could not drink, as deglutition could not be performed; and in making the effort to do so the water came back through the nostrils.

As she was too furious to be approached so as to give her any medicine, I ordered her to be placed in a loose box, to have sloppy diet, and to be kept perfectly quiet, promising to call again in the evening. Reasoning on the foregoing facts, I informed Mr. Ram that I had no hesitation in pronouncing the disease to be one of hydrophobia.

When I paid my patient a visit in the evening, I found all the symptoms of the morning, and which I have briefly recorded, to be greatly aggravated. She bit and tore her flesh off fearfully; broke down the woodwork of her stall, and threw herself upon the ground with great force; although she refused all food, she drank water more freely than in the morning. Considering the animal quite beyond recovery, I advised the owner to have her destroyed, which, however, he would not consent to. After ordering her to be kept perfectly quiet I left for the night.

Monday, August 27th.—Upon my arrival in the morning, I was not at all surprised when I was informed that shortly after my visit the previous evening the mare became very desperate, broke her head chain, got loose, and bit two other horses; after which the proprietor thought it advisable to send for the slaughterer and have her destroyed.

Post-mortem examination.—On laying open the abdomen and thorax, I found every organ in the former to be healthy; but in the latter, the lungs were found highly congested, much inflammation existed at the back part of the mouth, and likewise down the whole course of the trachea. The substance of the brain appearcd to be healthy, but the pia mater was slightly inflamed.

PARALYSIS IN THE DOG.

By Robert Wilson, Veterinary Student, Glasgow Veterinary College.

I am induced to forward for publication in the *Veterinarian* a record of the observations made on a case of paralysis in a dog, which was placed under my care in the infirmary of this institution. There is a special interest attached to the case, and which has excited the greatest attention to the symptoms manifested throughout, alike for the progress the disease made, as well as for the benefit which I think must accrue from the compilation on a reperusal of the record at any time; while probably it may act as a suitable guide to the treatment of similar cases in the future.

My patient was a liver-and-white retriever dog, about twenty-six inches high, strongly made, about nine months old, said to be of a choice breed, and highly estimated by his owner. On the 14th of May last he was admitted to the infirmary, where during a period of seven days he was under treatment for distemper, as it is usually termed. After suffering but slightly from this disease, and a return of health making rapid progress, he was discharged, the owner, it was believed, being extremely anxious about his animal, and sufficiently competent to undertake his care during convalescence.

On the 1st of June last the attention of Professor Armatage was requested to see the animal, symptoms of his former complaint having returned, and that somewhat more severely. These consisted of great dulness, languor, accumulating discharges about the eyes and nostrils, mucous membranes injected, muzzle dry, mouth hot, and breath offensive. He was prescribed for, suitable directions as to general treatment given, and in a few days he was again making rapid progress towards health.

The owner now sent the dog to a person in the country,

who was considered knowing in the dog line, which it was thought would minister to his benefit, not only in a medical point of view, but also as to his training. This, however, proved fallacious, for on the 7th of July Professor Armatage was again requested to see the animal, who recommended that he should at once be brought to the infirmary.

The previous history and treatment having been detailed to me, and considered in connection with the urgency of the symptoms now manifested, and knowing the usual termination of such cases, induced me to form an unfavorable prognosis. Paralysis of the hind extremities was now present, with anæsthesia of the skin evident on all parts of the body and limbs posterior to the last dorsal vertebra. Motion, however, was not destroyed, but it was neither regulated nor under proper control. Any attempts made to alter his position, and, indeed, on the most careful usage being observed during an examination, induced tetanic spasms of the whole muscular system. The tail was motionless, the urine passed involuntarily, and severe erythema had occurred on the inside of both thighs in consequence, during several days of utter helplessness. The bowels were severely constipated; the eyes and nostrils were partially closed by a gluey secretion; the mucous membranes injected; mouth cold; breath offensive; ears, feet, and legs cold, and the animal was tortured by an incessant, hard cough. The appetite was tolerably good; the pulse about 142, and weak; respirations rather hurried, and although ascertained with difficulty, numbering about 60; the temperature, as ascertained by one of Casella's thermometers, 100·3°. He lay at full length, being unable to sit up, and appeared exhausted from the spasms which prevailed.

The treatment was commenced by the administration of a dose of "Youatt's Castor-oil Mixture," the animal placed on a comfortable bed, the eyes and nostrils cleared of the irritating discharge, and every requisite for the securing of warmth and general comfort made.

On the 8th, at 8 a.m., the temperature was 102; pulse 120, fuller and softer; the eyes and nose cleaner; animal looking livelier, but in other respects not at all improved. Defecation, which was passive, took place towards evening. On the 9th, temperature 101°; pulse 142; and other symptoms unchanged. A pill was now prescribed containing the following:

Ferri Sulph., gr. ij;
Opii Pulv.,
Calomel, aa. gr. j;

one to be given each night and morning.

It would be a useless occupation of your space to record the observations *in extenso;* suffice it, then, to state that, under the treatment already summarised, the temperature ranged from 100·3° to 103°, the latter being noticeable during the evening records, and was particularly manifest during constipation. Laxatives were administered to overcome this state of the bowels when required, which occurred on three different occasions during the illness. To the loins was freely applied an embrocation at occasional intervals, which was attended with decided benefit.

The first symptom of improvement which I noticed was that of returning sensibility of the skin, as seen during the application of the liniment. This occurred on the 10th. There also appeared evidences of greater power over the hind limbs and tail. On the 11th he began to fling his tail from side to side when spoken to, partially drew up his hind legs, and moved about more in his bed. The discharge from the nose and eyes grew thicker and more plentiful; the membranes were paler in colour, the appetite good, and the pulse was reduced, and possessed a degree of strength and fullness, indicative of favorable progress. On the 12th I found him sitting on his haunches, and he appeared in every way improved, and greeted my appearance by a few good hearty wags of his tail. On the 15th he made some good attempts to stand when raised to that position, but appeared to have little control over the movements of his limbs. Dry friction was ordered, and he was left for the day. In the evening he had walked of his own accord a distance of twenty yards—a feat which, however, he accomplished in a very clumsy manner. It was not until the 21st that the rectum and bladder were evacuated naturally, and from this time strength might be said to be acquired almost perceptibly. Tonic medicine was given, consisting of

℞ Ferri Sulph., gr. v;
Gen. Rad. Pulv., gr. v;
Potassæ Nitratis, gr. iij;
Strychnine, gr. $\frac{1}{12}$;

made into a pill, administered morning and evening. This was commenced on the 18th, and on the 23rd he was able to leave the infirmary for his home, and has since continued in the best of health; nevertheless, I am sceptical as to his being of much service to his owner after a disease of this character.

BRAXY IN SHEEP.

By Charles Joseph Whitworth, M.R.C.V.S.L.,
Grantham, Lincolnshire.

On the 11th of October, 1866, I was called in by Sir John H. Thorald, Bart., M.P., Lyston Hall, to examine a flock of hogs (160), when the shepherd informed me that three or four had died suddenly without any premonitory symptoms. They appeared well at night and dead in the morning, which is very characteristic of this disease. Those that died I made *post-mortem* examinations of, and satisfied myself as to the cause of death. I afterwards proceeded to the fold (as these hogs were on turnips) to examine them in quietude, and, to an ordinary observer, they appeared blooming and in a good state of health. But I noticed the breathing accelerated, the fæces hard and slimy. I then caught several, and found them very fresh and full of flesh; eyes blood-shot; conjunctival as well as other visible mucous membranes much injected; head and ears excessively hot, with general febrile symptoms, &c.

I informed him the hogs were dying of a disease called braxy; the too well doing was their primary cause, although there were other exciting causes acting in concert, which I described.

These animals were folded on turnips, in a limited space (turnips *ad libitum*), and given other nitrogenous food, in the way of corn, cake, &c. The hogs thrived rapidly, but this forcing ultimately often proves too much for the "animal organism," especially if there comes a sudden change in the weather, such as frosty night, hail-storm, or easterly winds, with beating rains; the fatality is then much increased, which we can well account for. This sudden change of temperature produces in the animals a checked exhalation from the skin; a determination of blood to internal organs; and the secretions become torpid. The blood cannot be purified; the vessels are filled to repletion, and the animal suddenly drops without a struggle paralysed and dead. General febrile symptoms not always to be seen; secretions scanty; fæces hard and dry; urine high coloured; pulse and breathing accelerated; visible mucous membranes injected; eyes blood-shot. When trying to void either urine or fæces, the animals stretch themselves, bite at grass or turnips in pain; go down

as though colicked; nibble at anything on the ground, and get up again; gait dragging; paralysis and death.

Post-mortem examination.—On removing the skin the fœtor great; animals blown up; vessels filled with black blood; abdominal viscera much congested throughout; a red serous fluid in the cavities; contents of omasum hard and dry; kidneys disintegrated; bladder full of urine in pelvic cavity. Thoracic viscera.—Lungs congested; ecchymosis in serous membranes; pericardial sac full of serous fluid, yet entire absence of inflammation.

Treatment.—First removed them from the turnips, put them on to fallow, where I bled them all freely, then gave each a saline purgative; kept them there for thirty-six hours, and left orders for them to be moved about. When their bowels had responded, I gave them neutral salts in bran, and allowed them to go on grass land during the day, and again to be put on the fallows at night; next day gave neutral salts, also bran, with cut turnips on the grass, and gradually increased the quantity until they were allowed their usual diet, with some little modification.

N.B.—The hogs that were thus treated recovered, and are doing well.

About eighteen months ago I treated a flock belonging to Mr. Healey, of Osgodby, affected in the same manner. I had recourse to the same treatment, when they recovered.

My treatment for this disease (braxy) is precisely the same as I always adopt in splenic apoplexy, a disease closely allied to it, and due to similar exciting causes; and with the former so with the latter, the best of the flock die first.

I was called in some months ago to Mrs. Allans, Harrowby Hall, who had lost several beasts in a sudden and somewhat mysterious manner. It was said that they were "poisoned," &c. On my arrival I was shown into a cow-yard, where there lay one beast dead, with a frothy mucus around the mouth and nostrils, which struck me at once, together with the appearance of the other three, as being "splenic apoplexy." One of the three beasts laid on the ground in a dull comatose state, saliva dribbling from his mouth; grating his teeth; eyes partially closed; appetite lost; rumination suspended; fæces hard and dry, and streaks of blood on the fæces; urine high coloured, &c. The remaining two beasts were in a similar state, but not so far advanced. I having seen so much of this disease that I was quite certain they were suffering from splenic apoplexy. Consequently I informed the owner as to its causes, nature, &c., and that we could do no more in the way of prophylaxis than curing them in an advanced

state. These three I bled freely from the jugular vein; gave a saline purgative, and afterwards a stimulant; kept them moving about for twenty-four hours, and allowed them nothing to eat; at the expiration of that time to have bran much medicated, and gradually to resume their ordinary diet.

These three recovered, and then they lost no more on that farm since.

The one that was dead on my arrival I opened; the spleen was much engorged and ruptured, which of course was the cause of death.

Facts and Observations.

Cattle Plague in Switzerland.—According to the *Recueil* the cattle plague was introduced into Switzerland and Bavaria from the Tyrol. Immediately upon its appearance being officially announced in September to the French Government, the Minister of Agriculture put into operation the prohibitory measures against the importation of cattle of the 6th September and 5th December, 1865, and 10th April, 1866. In addition to these precautions, M. Bouley was directed to proceed to Switzerland, to investigate and report upon the sanitary measures adopted against the disease in the different cantons.

Source of Muscular Power.—The conclusions arrived at by Dr. E. Frankland, in his lectures delivered on this subject lately at the Royal Institution, are as follow:

"1. The muscle is a machine for the conversion of potential energy into mechanical force.

"2. The mechanical force of the muscles is derived chiefly, if not entirely, from the oxidation of matters contained in the blood, and not from the oxidation of the muscles themselves.

"3. In man, the chief materials used for the production of muscular power are non-nitrogenous; but nitrogenous matters can also be employed for the same purpose, and hence the greatly increased evolution of nitrogen under the influence of a flesh diet, even with no greater muscular exertion.

"4. Like every other part of the body, the muscles are constantly being renewed; but this renewal is not perceptibly more rapid during great muscular activity than during comdarative quiescence.

"5. After the supply of sufficient albumenised matters in the food of man to provide for the necessary renewal of the tissues, the best materials for the production, both of internal and external work, are non-nitrogenous matters, such as oil, fat, sugar, starch, gum, &c.

"6. The non-nitrogenous matters of food, which find their way into the blood, yield up all their potential energy as actual energy; the nitrogenous matters, on the other hand, leave the body with a portion (one seventh) of their potential energy unexpended.

"7. The transformation of potential energy into muscular power is necessarily accompanied by the production of heat within the body, even when the muscular power is exerted externally. This is, doubtless, the chief, and probably the only, source of animal heat."

Methylated Spirit.—In reference to the prohibition of methylated spirit in the formation of medicinal compounds, the Board of Inland Revenue allows of its employment for making of soap liniment or opodeldoc, as it is incapable of being used either wholly or partially as a beverage, or internally as a medicine. Probably sanction would be given by the Board for the formation of other topical applications with it.

Poisoning of Cattle with Fungi.—In the Sydney mail forwarded to us we find the following statement: "Spurious mushrooms," says the *West Bourke Guardian*, "are not only fatal to human life, but it would appear from recent experience also affect the duration of animal existence. In the Wyndham district several head of cattle have died, and the only assignable cause was scarcity of food and inclement weather. In one case, however, the cause of death was unknown, as the animals had both food and shelter. Suspicions having been aroused by the late mushroom poisoning at Melton, the remaining cattle were watched, and they were found devouring the large white fungi similar to those which had caused the late deplorable tragedy at Melton. The bodies of those which died presented similar appearances to those observed at the *post-mortem* examination of the deceased persons alluded to. Farmers and cattle-owners would act wisely by destroying those fungi growing on lands where cows have access, otherwise they may sustain a loss both serious and unexpected."

THE VETERINARIAN, DECEMBER 1, 1866.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE "CORRELATION OF THE FORCES," ASSOCIATED WITH MIND-LABOUR.

WHEN in a previous number we closed by adverting to the "correlation of the forces," it was not with any intention to take the subject up in all its bearings, or even only a few of them, full of interest though this might prove, as that would be somewhat foreign to us as a profession; but simply to show the connection that exists between the physical sciences, among which medicine claims a place, and how in their study mind-labour has to be called into requisition.

Mr. Grove, writing on the first-named subject, states as his opinion that "the various imponderable agencies or affections of matter which constitute the main objects of experimental physics, viz., heat, light, electricity, magnetism, chemical affinity, and motion, are correlative, or have a reciprocal dependence. That neither, taken independently, can be said to be the essential or proximate cause of the others, but that each may, as a force, produce or be convertible into the other. Thus, heat may mediately or immediately produce electricity, electricity may produce heat, and so on of the rest." Indeed, he even goes further, and is inclined to believe that these all will ultimately be resolved into modes of motion; but that it would be going too far *at present* to assume their identity with motion. Now, *force* may be defined as that which produces or resists motion.

This doctrine of the correlation of the forces, it would seem, is steadily gaining ground in the philosophic world; and by some it is believed that the day is fast approaching when the present theories of the existence of imponderable agents, of specific ethers, and other entities, will be done

away with, and the two fundamental conceptions of matter and motion be found sufficient to explain all physical phenomena.

"The existence of certain forces, or active powers of nature, such as light, heat, electricity, gravitation, &c., cannot be denied, yet we cannot define them as material, although they are known to us only in connection with matter, and through their several actions upon it. These several so-called forces—for we have at present no fitter name for them—while governing and constraining in various ways the power and action of man, are in other and endless ways submitted to his intelligence, and become the instruments with which he works in the material world. The relations of matter to force, as well as the correlation of different forms of force, and the connection of all with organization and vitality, are the problems most strenuously pursued by the philosophers of our own day. Experimental truths and metaphysical uncertainties come here into close contact, and too often engender shallow devices of language to shelter imperfect knowledge. But the search after truth by experiment and strict induction is now the rule of all science, and words are used by wise men but as counters, to be put aside or changed when they have fulfilled their temporary purposes."

Now, unless we are acquainted with the governing laws, how could these forces have been made available? We have before remarked that the acquirement of knowledge is associated with mind-labour, which is both great and must be continuous, although it may be not so considered by the many. Like hidden treasure, it must be diligently sought for to be found; but when found it amply rewards the seeker. "The gold and the crystal cannot equal it, and the exchange of it shall not be for jewels of fine gold. No mention shall be made of corals or of pearls; for the price of wisdom is above rubies. The topaz of Ethiopia shall not equal it, neither shall it be valued with pure gold." "Happy is the man," says Solomon, "that findeth wisdom, and the man that getteth understanding." Although there is still much ignorance aud uncertainty existing, yet we have faith in

mind-progress, and believe much is yet to result from the diffusion of knowledge.

Truly has it been said that "Labour is the universal lot of man; and those who endeavour to escape from labour, and to convert into a period of mere enjoyment that term of existence which has been given us for exercise and for discipline, are recreants to their destiny and the law under which they live. There is no honorable, no useful place upon this busy teeming earth for the idle man, be his station or condition what it may. There are few, indeed, to whom the path of excellence is not open in one direction or another, provided only there be the diligence and the determination which are necessary to pursue it with effect." But it may be said, in the idle adage, "All work and no play makes Jack a dull boy." If this be granted, the greatest relief and amusement will be found, not in mere abnegation and abandonment of mental toil, but in changing the subject of study.

"There is dignity in labour,
Truer than e'er pomp arrayed;
He who seeks the mind's improvement,
Aids the world in aiding mind;
Every great commanding movement
Serves not one—but all mankind."

Speaking of the development of the mind, Elihu Burritt has said—

"It has now reached such an altitude, and shines with such lustre, that our imagination can hardly find the way down to the morning horizon of its life, and measure its scope and power in the dim twilight of its first hours in time. The simple facts of its first condition would now seem to most men as exaggerated fancies, if given in the simplest forms of truthful statement. With all the mighty faculties to which it has come—with its capacity to count, name, measure, and weigh stars that Adam, nor Moses, nor Solomon ever saw—with all the forces of nature it has subdued to the service of man—it cannot tell what simplest facts of the creation had to be ascertained by its first feeble and confused reasonings. No one of to-day can say how low down in the scale of intelligence the human mind began to exercise its untried facul-

ties, what apposition and deduction of thoughts it required to individualise the commonest objects that met the eye—even to determine that the body it animated was not an immovable part of the earth itself; to obtain fixed notions of distance, of colour, light, and heat; to learn the properties and uses of plants, herbs, and fruits; even to see the sun sink out of sight with the sure faith that it would rise again. It was gifted with no instinct to decide these questions instantly and mechanically. They had all to pass through the varied processes of reason. The first bird that sang in Eden built its nest as perfectly as the last. But, thought by thought, the first human mind worked out conclusions which the dullest beast or bird reached instantly without reason. What wonderful co-working of internal and external influences was provided to keep thought in sleepless action—to open, one by one, the myriad petals of the mind! Nature, with all its shifting sceneries, filled every new scope of vision with objects that hourly set thought at play in a new line of reflection. Then out of man's physical being came a thousand small still voices daily, whispering, 'Think! think!' The first-born necessities, few and simple, cried '*Think!* for we want bread, we want drink, we want shelter and raiment against the cold.' The finer senses cried continually, 'Give! give thought to this, to that.' . . . . . But what is all this to the processes of thought and observation through which the mind of man has reached its present expansion, through which it has developed all these sciences, arts, industries, and tastes, the literature and intellectual life of these bright days of humanity! The figure is weak, and every figure would be weak when applied to the ratio or the result of this progression; but at what future age of time, or of the existence beyond time, will the mind that has thus wrought on earth open its last petal, put forth no new breathing, unfold no new beauty under the eye of the Infinite, who breathed it, as an immortal atom of His own essence, into the being of man?"

With the whole of the above quotation we may not, perhaps, concur; yet that the mind is capable of culture no one will gainsay, and hence results progress. "The mind," says the same writer, "is the central personage in the trinity of man's being, linking the mortal and immortal to its life and action; vitalising the body with intelligence, until every vein, muscle, and nerve, and function, thrills and moves to the impulse of thought; vitalising the soul with

the vigorous activities of reason, giving hands as well as wings to its hopes, faiths, loves, and aspirations; giving a faculty of speech, action, and influence to each, and play to all the tempers and tendencies of its nature." If such be the powers of the mind, such its relative influence, how necessary it is that its culture be not neglected; for should it be, both body and soul will be imperilled. Hence the subject we have been descanting on is one worthy of thought and consideration.

It is to be regretted, but there appears to be a downward inclination of the mind at the present day through the speculations of philosophy, falsely so called, and which give us a glimpse of the depths into which they are likely to lead us. Thus, one class of speculators assure us that man is descended from the brutes by natural generation, another class derive the mind from physical causes and from nervous force, and there are some eminent men who are trying to account for all the phenomena of the world by referring them to matter and its forces; while others deny altogether the existence of matter. It would be well to remember the line of the poet, as elsewhere applied, that in this descent

"In the lowest deep a lower deep still threatens to destroy."

We trust it will not be inferred from these strictures that we object to experiment and observation. On the contrary, we are the most earnest advocates for a close investigation of nature's laws, believing them to be immutable, and their development fraught with the greatest good to mankind, while at the same time their application gives proof of intelligence of the highest order. It is the mind being imbued with a knowledge of science that marks the progress of the present age, and has led to the glorious revolution which has taken place around us. Modern thought and acts may be said to be steeped in science. What we contend against is the prevalency of crude and unbased speculations, leading to theories altogether untenable and subversive of truth—a removal of the "old landmarks," and a throwing down of the labour of ages by the substitution of conjecture and hasty conclusions for established facts. Against such we would ever warn the inquiring mind.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

The Clinical Note Book. By George Armatage, M.R.C.V.S., Professor of Anatomy and Physiology in the Glasgow Veterinary College, &c. Glasgow: Daniel Robertson. Edinburgh: MacLachlan & Stewart. Dublin: Hodges, Smith, & Co. London: Longmans & Co.

Method is one of the essentials of accurate observation. It is poetical to speak of the eccentric genius which sets rule at defiance and attains success by following the suggestions of an unerring instinct; but in everyday life the man who takes most pains to compass an object is most likely to succeed. Much of the knowledge which enriches the riper life of the scientific inquirer is due to correct habits of observation, acquired in youth; and he is fortunate who has not only been taught early, but well taught, and is so saved from the irksome task of endeavouring to unlearn.

The object sought by the author of the little work before us is stated to be that of inducing the adoption of a *system* in recording cases, especially by students; and for the purpose of facilitating the process of taking notes, Professor Armatage suggests by certain printed headings on each ruled page, what should be the subject of inquiry; for example—the number and character of the pulse and respiration, symptoms, details of treatment, history of the case, and the result of the remedies employed. It will be gathered from this description that the book is principally made up of pages which are blank save at the top of the several columns, which are arranged for the reception of the remarks which the clinical student is expected to make upon every case that presents points of interest. A few pages of letter-press at the commencement contain observations upon the pulse and respiration, the methods of auscultation and percussion, the examination of animals suffering from lameness, and also upon the chemical examination of the urine. All the directions given and the suggestions thrown out will be found very useful for the purpose of initiating the tyro in the art of taking notes systematically, and we can well imagine that a

series of carefully filled 'Clinical Note Books' would be among not the least treasured possession of the practitioner in after years. Every student should possess a copy of this work, and make it his daily companion.

A System of Instruction in Qualitative Chemical Analysis. By Dr. C. Remigius Fresenius. Sixth edition. Edited by Lloyd Bullock, F.C.S. London: John Churchill & Sons.

A System of Instruction in Quantitative Chemical Analysis. By Dr. C. Remigius Fresenius. Fourth edition. Edited by Lloyd Bullock, F.C.S., and Arthur Vachey, F.C.S. London: John Churchill and Sons.

The works on qualitive and quantitave analysis of the celebrated Wiesbaden professor, Dr. Fresenius, have been for many years, and still remain, the standard not only in Germany but in every part of the world where analytical investigations are presented.

In the preface to the first edition of the volume on 'Quantitative Analysis' Dr. Fresenius states that he "has spared no pains or labour, not merely to keep it up to the improved state of the science, but to make it the medium of introducing methods of research in advance of all other works. Whatever has been proposed, either in this country or on the continent, to facilitate the path of analysis, has been tested, and, when found sound and practical, has been introduced in the proper place. Every doubtful point has been rigidly subjected to repeated experiments, errors corrected and faults amended, and many new processes added from the author's ample experience in his own laboratory."

Many years' experience in the use of the works of Fresenius enable us to say that this eminent chemist has most successfully accomplished the task he set himself, and that the chemical world is much indebted to him for devising, collecting, and critically examining the processes which it employs, both in qualitative and quantitative analysis. The original work is written in the author's native tongue, and the duty of translating it from German into English has been entrusted into able and trustworthy hands in the person of Mr. Lloyd Bullock, who, in editing the last edition of the volume on quantitative analysis, obtained the co-operation of Mr. Arthur Vacher.

In addition to minute and accurate descriptions of the best methods of analysing the simplest as well as the most complex of mineral combinations generally, there are lengthy appendices, containing directions for the discovery, identification, and quantitative estimation of what may be termed special substances. Thus, in the parts of the books here alluded to, we may mention that among other matters of minor importance to our readers, there will be found a description of that beautiful process which, among many other benefits which it has conferred on science, enabled Professor Stokes to furnish us with the most advanced views respecting the colour of the blood and the functions performed by its cells.

The most recent and most reliable methods of analysing waters, air, manures—of detecting and determining the amount of mineral and vegetable poisons, the mode of preparing and using the solutions employed in volumetric analysis, as well as many other special subjects of equal importance, are all fully and accurately detailed by Dr. Fresenius.

When we state that, for clearness of explanation, simplicity of language, and fulness, completeness, and accuracy of description, the 'System of Instruction in Qualitative and Quantitative Analysis' of Fresenius is unrivalled by any similar work in any language, we believe that we have said more than sufficient to commend it to every one endeavouring to acquire a sound and complete knowledge of that most useful branch of experimental science, practical chemistry.

Extracts from British and Foreign Journals.

GLASGOW VETERINARY COLLEGE.

THE duties of the winter session, 1866—1867, were resumed at this institution November 6th, 1866, when the introductory lecture was delivered by the Principal, Professor M'Call. There was a numerous attendance of medical and veterinary practitioners, farmers, dairymen, and students.

Professor M'Call, after some words of welcome to the students, proceeded in the former half of his lecture, to address to them some practical observations under the following heads:—First, the relations which exist between students and professors; second, the

motives which should actuate the student in the choice of his profession; third, the advantages of education in the development of every profession, and the want of education as an obstacle to the acquisition and progress of veterinary science; fourth, clinical instruction, its importance, and the daily and habitual training required to recognise the diseases of the lower animals; fifth, memory and reason, their relations, and the importance of cultivating the habit of observation; sixth, habits, good or bad, and the influence they exert upon a student's path; and seventh, the importance of system in the economising of time. He next went on to speak of the present position of the veterinary profession, and its future progress as indicated by a reference to the cattle plague. Under this head Professor M'Call said—The progress of veterinary science during the last ten years, although not rapid, has been progressive and substantial; in proof I appeal to the valuable services the profession rendered the country in staying the ravages of the deadly cattle plague. I regret to admit we have done less good than could have been desired, and much less than would have been done had the public, and the government more especially, been guided by the opinions of the veterinary profession at first. I have no hesitation in asserting that, had the advice tendered by myself been acted upon—and it is but just to say it would have been acted upon had the authorities of Glasgow possessed the power—the West of Scotland would have had hundreds of cattle at the present moment grazing on its fields that now lie buried under its soil. This is no exaggeration, but, as the following facts relative to the spread of the rinderpest will prove, a just inference. The introduction of the rinderpest to this city was due to the exposure of a diseased cow in the cattle market upon 17th August, 1865. The cow in question, according to the information elicited, was purchased at a public sale in Edinburgh the day previous to that on which it was exposed in Glasgow, and had been removed from a dairy in which the plague then existed. With the consent of the owner the cow was immediately destroyed, and the remainder of the herd—twenty-eight in number—being suspicious, and several showing symptoms of epizootic pleuro-pneumonia, they were removed from the market to a shed in Henrietta Street, and from that shed, in the course of a few days, conveyed to the slaughter-house in such numbers as their condition necessitated. A brief history of what ultimately befel these animals is not without interest. On the 17th August one cow was condemned as labouring under plague, and the carcase was buried; on the 18th one was condemned as labouring under pleuro-pneumonia epizootica, and the carcase buried; on the 19th one for pleuro-pneumonia, and the carcase buried; on the 21st, one for plague and two for pleuro-pneumonia, and their carcases buried; on the 23rd, one for pleuro-pneumonia, and the carcase buried; and on the 24th, three were condemned for plague and three for pleuro-pneumonia, and their carcases buried. You will thus observe, that in the short space of eight days, out of this herd of twenty-eight animals no less than thirteen were destroyed, and

their carcases buried, being totally unfit for human food. From the *post-mortem* appearances presented in the cases I refer to, there could be no doubt that the animals affected by pleuro-pneumonia laboured under the disease for days previous to their entering the cattle market, and it was evident to me that the owner was not in ignorance of their diseased condition when he brought them to Glasgow. The first case of rinderpest in the dairies of Glasgow I find, by a reference to my records, was discovered and made public upon the 3rd day of September, 1865, being the second day following that of the meeting of the Justices of the Lower Ward of Lanarkshire, and at which meeting I was present by special request. I allude to this meeting, as statements were there made that "no cases (of plague) had been reported, and no authentic cases discovered," and that, in short, it was a mere rumour—persons of skill mistaking pleuro-pneumonia for cattle plague. Such statements in themselves were not of much consequence, but coming from the influential source from which they did come, I can assure you they carried conviction to a great many minds, and did an incalculable amount of harm. The dairymen of Glasgow from the first were unwilling to believe the deadly plague was so very near their doors; and after the report of the proceedings of the meeting referred to, they positively refused to listen to the words of advice I was deputed by the Lord Provost and magistrates of the city to tender in their name and by their authority. As stated, the first case of plague appeared in the market on the 17th August, and the first case of plague in the dairies on the 3rd September. We had thus thirteen days to deal with the plague before it reached the daries of the city, allowing four days for the period of incubation, during the which its presence could not be detected; and had the diseased animals in the byre in Henrietta Street been instantly destroyed, the cattle market shut against any animal leaving it alive, and other precautionary measures adopted, which the authorities would gladly have adopted, the rinderpest at that time would not have spread. For other four weeks the disease was confined to the dairies within a circle having a radius of a quarter of a mile from the cattle market, and still the market could not be closed. On the 9th September the plague appeared at Barney Hill, Springburn, and this was the first outbreak of plague beyond the city bounds, at least I was informed Mr. Cockburn, the Inspector for the Lower Ward, said so, when his attention was called to the case by us. On the 13th September the plague appeared at Auchinlech, Springburn, and here it was mixed up with pleuro-pneumonia. On the 16th September it appeared at Meadow Bank, Cawder, and here it was mixed up with epizootic aphtha. After this its spread was rapid in and around Glasgow, but in almost every case which came under my personal observation, it could be traced to the transit of cattle which had been exposed to the contagion or poison within the cattle market. From the first, in common with others in the profession, I recommended the isolation of stock, and the slaughter of all infected herds, as the best means, the surest means, and the most

rapid mode of dealing with the rinderpest; but our opinion in many quarters were treated with ridicule, and it was not until every means, scientific as well as empiric and absurd, had been tried and failed, that the Privy Council adopted similar means as those advocated by us. The Cattle Market was kept open, and cattle freely allowed to move about until 9th January. The compulsory slaughter of cattle, with compensation and stoppage of transit, did not come into operation until the 20th day of February, 1866. If you place all these facts together, and to them add the most important fact of all—viz., that the plague has died out daily and rapidly from the moment the measures we so early suggested were carried into practical effect, I think it is but fair and reasonable to conclude, that if the measures I suggested could have been adopted by the local authority of Glasgow, the plague would not have spread in the West of Scotland, and thus thousands of pounds would have been saved to the country. The veterinary profession were somewhat roughly, and I think unfairly, dealt with by the public and the press during the period the cattle plague prevailed; but it is gratifying to know, that after the able and protracted investigation and experiments so ably conducted by the Royal Commission, and in which Commission the profession had but one representative, it has been unmistakably demonstrated that veterinarians were not only the legitimate, but also the only trustworthy authorities upon cattle diseases and cattle plagues. But in all this, we have little indeed to boast of; and had it been otherwise, the profession might well have been ashamed. I am strong in the hope that the discussions which have taken place on the qualification and abilities of the members constituting the profession, will not be lost sight of, or fail to do good. For, while much that was said was undeserved and unwarrantable, there were not a few defects, perhaps, not discovered, but illuminated, and that well deserved the careful consideration of every member who wishes well to the profession. In the three learned professions of theology, law, and medicine, the fostering care of government has done much to improve their usefulness and heighten their status; but as yet, veterinary medicine in Scotland has not been blessed with the smallest pittance of pecuniary assistance from government, or the slightest recognition of royal favour. The late Professor Dick assured me from his own lips, that he had spent ten thousand pounds of his own hard earnings in the education of veterinarians, and the advancement of veterinary science; and I can conscientiously affirm that I have spent no trifling sum in the same direction. If the government of Great Britain would follow, even at a distance, the example of France and other continental countries, in rendering assistance towards the education of her veterinarians; and if the public and the various local authorities of the country would employ, and properly reward, veterinary surgeons for their services, the cry of want of knowledge of our subjects would ere long be unheard. It is generally admitted that we possess a considerable amount of knowledge bearing upon the diseases which afflict horses, but our knowledge of bovine diseases is exceedingly limited. And,

accepting the assertion as it stands, I ask why is it so? Are equine diseases more easily recognised and treated than bovine diseases? Not at all! The reason must be sought elsewhere. We are daily employed in the treatment of horses, and in general liberally paid for the services which we render. Whereas in the management of cattle, and the treatment of their diseases, we are only employed in exceptional cases, at the eleventh hour, and unless a certain cure is held out, the owner, in his own interest, prefers killing the animal and selling the diseased carcase for human food. Let the authorities protect the public from eating diseased meat; shut up the owner to the alternative of curing or burying his diseased beast, and the veterinarian will be found more frequently in the byre than in the stable, and his advice productive of as much benefit to the dairyman as it is, and has been, for years to the horse proprietor. But while I urge this much on behalf of the public and the profession, I would not overlook my duty to the dairyman. If it is unlawful and against the interests of society, that the dairyman should sell to the butcher the carcase of his diseased animals as human food, it surely cannot be lawful, nor in the interests of society, that stock proprietors and cattle dealers vend diseased cattle in our live stock markets. If free trading in diseased living animals is to be allowed longer to flourish under the eye of authority, why not extend the same principle to the sale of diseased dead animals? The law is only a law entitled to respect and observance when it protects and punishes every member of society alike; and if the law were so administered that parties could not dispose of cattle labouring under contagious diseases in our live markets, without being severely punished, we would hear less of diseased meat prosecutions in our police courts, and the dairymen, being protected in the purchase of sound animals, could afford now and again to bury a diseased carcase. It is neither the wish, nor the interest of cattle proprietors in general, to traffic in diseased animals. There is but one class of individuals who make a profit by it, and that class is the third-rate butcher, provision merchant, and eating-house keeper. Hitherto, veterinarians in this country have only been of service in prescribing for diseased animals, in dealing with disease; but if the public were wise in their own interest, they would request us, and assist us in preventing, as well as curing disease. For upwards of twenty years this country has annually lost thousands of cattle from one contagious disease alone, viz., pleuro-pneumonia, and at the present moment it is busy among our herds. One gentleman present has lost twenty-two cows out of a dairy of thirty-five; and a few weeks ago I was consulted by a farmer who had lost twelve out of twenty, and now the disease has appeared among his young stock. The number of deaths in these two instances is appalling, and the loss, directly and indirectly, cannot be estimated at less than £900 or £1000. The plague has drained the pockets of farmers and dairymen of thousands sterling, but, thank Providence, we are now free of the disease in this country. Pleuro-pneumonia has drained our pockets of millions of pounds, and she is still in our midst, the great enemy of our stock.

And why is it so? Can nothing be done for it? Yes, much! It is a specific disease, and a disease not natural to the British isles. Kill all foreign fat cattle where they first touch our shores, or at the first market in which they are exhibited; quarantine all foreign store stock until they shall have proven themselves to be sound; inspect our markets, excluding all diseased animals, and have our fat and store markets apart; inspect our dairies, and only license such sheds or byres as are well ventilated and thoroughly drained; determine the number of animals to be kept, by the cubic and superficial capacity of the byre; isolate all infected herds or dairies, where pleuro-pneumonia exists, treating the diseased, and burying the dead; inspect all public conveyances used in the transit of live stock; regulate the number of cattle, under any circumstances, carried by steamers, paying special attention to the ventilation and standing space. Use the means I have indicated, and other means which the plague has taught us to be of benefit in controlling contagious diseases; and if the contagious pleuro-pneumonia of cattle now decimating our stock is not thereby completely extinguished, —"stamped out"—its operations will be so curtailed that the losses resulting to stock-holders from the presence of the disease, will sit lightly upon their shoulders. Gentlemen—Since the above remarks were penned, I have been honoured with instructions from the Hon. the Lord Provost and magistrates of Glasgow, to inspect and report upon the present condition of all the dairies and cattle sheds within the police bounds of the city. This step is taken with a view of their being licensed under the "Cattle Sheds in Burghs (Scotland) Act, 1866," and therefore it is a compulsory government measure, and I rejoice to think that it is one promoted by government. For, had it been otherwise, I am convinced from past experience that some individuals in authority would have burked the question, vouching as a reason, that it was attended with an outlay of public money. That the measure is much needed no impartial judge can attempt to gainsay, and that it will secure comforts in housing and feeding, which in many instances the cattle in large cities have not hitherto experienced is self-evident. But before I proceed to execute the trust reposed in me, I feel it my duty to state that, as in the case of the cattle plague orders at first, the measure is but a half one, and that it lacks within itself the elements of success. It is true, it will improve the conditions under which cattle in the future are to be kept within populous places, but it will not be productive of the benefits to stock proprietors which government evidently intended. The objects of the bill, I apprehend, are to secure such improvements in the housing and feeding of stock as are likely to promote their continuance in health, to lessen the fearful mortality present in our dairies, and to improve the general sanitary condition of localities in which dairies are situated. Now, these objects are really good, and just such as we stand in need of, but unfortunately it will be found that the bill, as a measure within itself, leaves untouched the principal object of all, viz., the prevention of disease in the dairies, and the consequent loss

of money to the dairyman. Upon this head much might be said, but as I have already detained you too long, I shall be brief. The chief, nay, almost the sole enemy to the health and lives of cattle within byres, is epizootic pleuro-pneumonia. This so-called pleuro-pneumonia is a highly contagious febrile disease, and in my experience, contagious to that extent that the ventilation, the drainage, and other conditions of the byres, have little influence in arresting the onward march of the disease. Like rinderpest, once allow pleuro-pneumonia to have a victim within the byre, and few, if any, will escape its grasp. Do not mistake me, I am alive to the benefits of ventilation, drainage, cleanliness, and other *hygienic* conditions which, we well know, assist in maintaining the standard of health. But I repeat, drain, ventilate, and improve the condition of the byres, until they become models of perfection, and yet, notwithstanding, permit a cow labouring under pleuro-pneumonia to enter any one of these byres, and she will, in due course of time, transmit the disease, with few exceptions, to every cow in the byre which has not had a previous attack of the same disease. Knowing this to be the case, and that the opinion I now tender will be found to be an established fact, I again repeat, the bill in itself is but a half measure; and unless the local authorities throughout Scotland supply the element which it wants, viz., a rigid exclusion of all diseased animals from our markets and dairies, it might almost as well never have passed into law. The landlords and tenants of dairies in burghs and other populous places throughout Scotland are now called upon—compelled—to lay out money in improving their condition, and will only be allowed to keep a certain number of cattle within them; and if the authorities do not bestir themselves immediately, and put down those individuals who traffic in every variety of diseased cattle, thereby spreading cattle plague broadcast over the land, ruining cattle proprietors, and feeding the community upon diseased meat and milk, I do hope the public and press will not delay in calling them to account.

The lecture was listened to throughout with much interest, and elicited frequent applause.

PAYMENT OF CATTLE INSPECTORS.

The enclosed has been sent to Colonel Harness, veterinary department of the Privy Council:

Sir,—The inspectors of Essex, feeling the injustice of inadequate remuneration as awarded by the local authorities of the county, on the 6th of last April held a meeting at Chelmsford, passed resolutions touching the matter, which were laid before the authorities by Lieut.-Colonel Brise, and the bench awarded them two shillings and sixpence a week; for this sum the inspector is expected to send to the clerk of the local committee a weekly report, a copy to the veterinary department of the Privy Council, and hold for him-

self a copy, to examine all stock found upon the public road, and some other duties.

From personal acquaintance I have every reason to believe that there is not another class of men more devoted to the preservation of cattle from plague, and other infectious disorders, although incompatible with their interests, than the veterinary surgeons of the county of Essex. Much work has been done by them they never expect to be paid for, but, sir, this age is not so good-natured as to produce men who will continue to work for the benefit of others, themselves receiving no remuneration. As chairman of the Chelmsford meeting I am supported by all the inspectors of the county, by whom the resolutions were signed, when I say that the award of 2s. 6d. a week is a despicable sum—an insult to the veterinary profession, and a disgrace to the men who awarded it. My inspect district extends over thirty-five extensive parishes; there are 48,000 sheep, worth £120,000; and 4,000 cattle, worth £60,000. The cattle plague broke out on two farms in the district in August, 1865. I was not then an authorised inspector, but I felt it a duty to do all in my power to prevent, if possible, the spread of so dreadful a malady, and it gives me great pleasure to state that the means used have been entirely successful; the disease has not spread to other premises. As a veterinary surgeon my business occasioned frequent visits to the parishes of this and the adjoining districts; I ascertained with what other districts cattle trading was carried on, if with infected places, and where there were no council orders to prevent. I did not hesitate, although greatly prejudicial to my interests—I made myself many enemies—to make free use of the press, warning the public of the danger of purchasing cattle they knew nothing of, and the advisability of discontinuing for a time the purchase of cattle altogether. A mutual protection society was formed in this borough without delay, the members agreeing not to purchase any fresh cattle for the following six weeks. I took in every issue of the *London Gazette*, that I might be informed of all orders immediately issued from the Privy Council, and without loss of time pressed upon the authorities the necessity of immediately putting them into force. And it has been owing to the co-operation of the authorities of the districts of Linton and Saffron Walden that these two districts have enjoyed an immunity from cattle plague.

That the part taken by the veterinary profession has not been unimportant, I may remark, that it was a veterinary surgeon who at the outbreak of cattle plague suggested the plans for suppressing the disease which were put in practice only in March last, when all other means had failed, and only after the fearful malady had destroyed three hundred thousand cattle, value four million pounds sterling. It was a veterinary surgeon who, by timely advice to the stockmaster and local authorities, caused the cattle traffic with the metropolitan market to be suspended, a source whence infection spread to all parts of the kingdom, and so saved the cattle of the two extensive districts of Saffron Walden and Linton from attacks

of the fearful scourge; but the veterinary surgeon has not only not received one farthing remuneration for using preventive measures, but has suffered heavy pecuniary losses. The stigma of communicating cattle plague from place to place is upon every cattle inspector, and the proprietors of stock have refused his calling at their premises in the ordinary way of business, or of consulting him as heretofore upon general veterinary matters; animals have been allowed to suffer, to die, or to be slaughtered. For the seven months ending March of the present year, I found the proceeds of my veterinary business had diminished in the sum of £100, or £3 10s. per week, and other veterinary surgeons have suffered similar losses from the same cause. It would have been more consistent with sound judgment if the local authorities of the county of Essex had upheld and appreciated the services of men who were making such sacrifices for the public good; but instead of this, some were most severe in decrying them. When discussing the question of cattle plague at one of the adjourned sessions at Chelmsford, Mr. Way, a member of the bench, spoke of us in the name of "horrible inspectors;" and Mr. Oxley Parker said, "Any person would do for an inspector as well as a veterinary surgeon;" and that gladiatorial organ the *Times* has been most extravagant in its abuse, and now that the preventive theory, as propounded by the veterinary surgeon at the outbreak of the cattle plague, has been found compatible with facts, this paper is the last to offer its columns in the services of the men whose character it has so unjustly maligned.

The veterinary surgeons of the county of Essex were of the foremost who suggested strict isolation, movement of cattle only by licence, non-return of cattle and sheep from the metropolitan market, and the "stamp-out" system.

Are the services of the veterinary surgeon in preserving the lives of our meat-producing animals of no value to the state? And, unlike any other, is not the profession to stand upon its merits? And is it consistent that it should be bandied and bullied by the *Times* for promulgating right principles, and insulted as some local authorities of the county of Essex have insulted it? In the name of the veterinary inspectors of the county I beg most respectfully your attention, and that of the lords of her Majesty's Privy Council, to this communication, and to state that it is simply ridiculous to suppose the inspector will continue to do the work expected of him at a salary of two shillings and sixpence a week.

ISAAC SEAMAN,
Chairman of Meeting of Cattle Inspectors, held at Chelmsford, April 6, 1866.

THE CATTLE PLAGUE.

By Howard Reed.

(*Continued from* p. 915.)

For some time the reports affecting the liability of sheep were discredited. The wish being father to the thought, the disbelief in this additional and unexpected calamity was very natural. Professor Simonds was one of the first, I believe, to recognise the fact that cattle plague might be transmitted from the ox to the sheep, and back to the ox. The cases in the East of England confirmed his view, which, though much contested, has unhappily been substantiated by many other instances. The medical commissions of Norfolk and Edinburgh, while they confess the sheep to be *less* disposed to receive contagion than oxen, place the fact of liability beyond question; and it will be seen that Professor Simonds, in the paper read before the Royal Agricultural Society (Feb. 21), that of twenty-three flocks in various parts of the country, comprising 3948 sheep, 2265 had died, and this within the last few months. An Order by the Belgian Government, dated 12th October, forbidding the entrance into that kingdom of sheep from Holland, where the pest was then raging, shows them to have been thoroughly aware of the danger. It is a matter for regret—and the circumstance has been observed in Austria as well as England—that there is no mitigation of the disease when the inoculating virus is taken from sheep and passed back to cattle.

Finally, as to the infectious nature of the cattle plague. It has been said that a pocket-hankerchief once impregnated with the virus of smallpox, and carried round the world, will convey the disease after a lapse of ten years. This testimony applies quite as fully to the virus of rinderpest, which, beyond this astonishing vitality, is swift and subtle in the highest degree. Though it seems to depend upon animal life for its development, it by no means does so for its conveyance from place to place. Where the gentle breeze and the running brook will not convey it, all living things become its involuntary carriers. Flies, farm-vermin, birds, cats, and dogs, the higher quadrupeds and man, transport it from place to place, either internally or externally. It finds a hiding-place in hay and straw, and in articles of merchandise passes the frontiers of contiguous countries, and crosses the sea from one conti-

nent to another.* Nothing seems to kill it save purging flame or torrid heat.† It is carted into the field with the manure, and, though buried beneath the furrow, is said to retain its malignity for many years.‡ Doubts are also expressed lest it may not pass with the rain-water to the under-drains, and from them to the feeding-troughs of the cattle which these so frequently supply. Scattered upon ground exposed to the sun's rays, it is highly probable that, like other forms of miasmata, the virus of the cattle plague may be drawn up with the earth-vapour, blown in the cloud, and discharged upon some region distant from the point of ascent. Unless under the impulse of wind, the atmosphere will not convey it more than a few hundred yards. The air about thirty yards from a fever patient is said to be harmless; but Professor Simonds extends this distance in the case of cattle plague to 500 yards; in which case it may be supposed that the virus is too much diluted, or sinks by its own gravity to the ground before it attains the distance from the ejecting source.

It is observable that when this virus escapes from Russia, like that of smallpox, it attacks the denizens of a new soil with fourfold the virulence it does the race which, according to some, gave it birth. Within the region of the Steppes the mortality ranges from 45 to 50 per cent. In Poland, according to the official communication of Brigadier-General Mansfield, in 1857, about 50 per cent. When it reaches Hungary the mortality rises to 65 per cent.; while with ourselves and the Dutch it reaches as high as 90 per cent. As it spreads to the north and west, the poison works with greater avidity, slumbering in the heats of summer, and awaking to fresh activity during the rigorous winter. Consul-General White, writing to Lord Clarendon from Warsaw, in 1857, attributes the difference to the superior constitutional strength of the aboriginal race of Polish cattle. Without denying this fact, it is necessary to bear in mind that we are led by due observation of smallpox to expect such behaviour, which, as Dr. Playfair observes, although fatal enough with us, acts as a

* "We have just received intelligence of an outbreak of this malignant fever in America."—*Times*, March 7.

† Dr. Kemp, in his 'Natural History of Creation,' says that a temperature of 120° effectually destroys the virus of continued fever. Rinderpest, however, raged in Egypt in the presence of a greater heat. I regret that I have not been able to consult for this paper Dr. Ogilvie's Report to the Pacha of Egypt on the fierce attack which carried off the cattle of that country.

‡ Dr. Voelcker, entertaining a high opinion of the disinfecting power of soil, thinks otherwise.

most malignant pest when it deserts its usual haunts. It is hopefully characteristic of this poison that it requires the presence of certain congenial conditions—perhaps of the climate, perhaps of the animal organism; certainly of the latter, for the deteriorated animals always first fall victims, and then, as the virus strengthens, the rest are carried off. Professor Röll has found this to be the case in Austria. He says the cases are sporadic in certain years, and that it only becomes generally diffused in years when contagious diseases among men show a severe type. Without this ray of hope we might well view with dismay the growing demand for foreign cattle, and the vehicular facilities devised for the enlarged proportions of this trade.

Cause.—Having already trenched upon this subject in the section accorded to Origin, I intend to deal briefly with it in order to allow the more room for what naturally follows.

It is generally allowed that disease is referable to two causes —existing and predisposing. With the desire to be rather more definite, some authorities acknowledge a third set of causes, which they term exciting. In order to set up a disease, the existing and predisposing causes must be present. The existing tendency to death is ever present in the organism, which is born to die; not so the predisposing. Among the latter may be enumerated hereditary tendency; a plethoric state of body induced by high living and little exercise; a deteriorated state of body induced by low living and impure air; a depressed circulation and susceptible nervous system; previous disease; mechanical and chemical injuries; atmospherical changes and conditions—extreme heat, extreme cold, excessive moisture, excessive dryness, different electrical conditions, variations of the barometer, and paucity of light. Further, the atmosphere, and it may be added the water, contain impurities that have the power of exciting disease: these are, the matter of malaria, inducing ague; contagion, causing various fevers, &c.; and noxious gases.

Dr. Brocklesby (1746), who minutely studied the characteristics and causes of the plague that attacks the human organism, compared the zymotic germ of that disease to an exotic, which, being transplanted from its *locus natalis* in other lands, exists here for a time, and then dies out. It is a question whether we must not adopt the same view; for although men of considerable reputation are found to believe in spontaneous generation, the weight of authority is undoubtedly against such a supposition. It will, I think, be generally admitted by those who resist the spontaneous theory, that although the virus cannot be generated here,

its operations here can be materially facilitated. "Filth," say the Edinburgh Committee, "cannot generate the specific poison of rinderpest, but may intensify it." There are other causes which tend to invite attack by throwing down the natural defences of the system. To some of these predisposing causes, already referred to, it is desirable to direct attention.

(*To be continued.*)

ON THE NATURE AND COMPOSITION OF FOOD.

By Lyon Playfair, C.B., LL.D.

From "Good Words."

(*Continued from* p. 920.)

All experience teaches us, that when much labour is to be accomplished, a large quantity of food must be consumed. A horse, when put to work, receives corn and beans, both being rich in flesh-formers, in addition to hay. Soldiers cannot fight on their peace diet. We learn this by dire experience in the Crimea, when our overwrought and underfed soldiers died by thousands of disease, and not by the bullets or steel of the Russians. Towards the end of the war, the mistake was rectified, and the troops became healthy. Other countries knew the fact, and issued "war rations" as part of their system of feeding troops. These war rations are shown in the table given in the next page.

If these numbers be compared with the peace rations already given, it will be found that the 4 oz. of flesh-formers in peace increased to from 5 to 6 oz. in war; the heat-givers and carbon being augmented in proportion. Not less than $5\frac{1}{2}$ oz. of structural food ought to given in war, when toilsome marches, want of sleep, and trench-work task the body heavily in labour. Our sailors in the navy receive 5 oz. of flesh-formers daily, and those of the French navy $5\frac{1}{2}$ oz. In the Crimea our soldiers, with their insufficient diet, were only able to remove 10 cubic yards of earth daily, in the construction of the railway from the port to the camp; while the English "navvies" sent over, removed 20 cubic yards. The latter, however, received $45\frac{1}{2}$ oz. of solid food daily, containing $5\frac{3}{4}$ oz. of flesh-formers, and above 17 oz. of carbon. Navvies, when labouring on piece-work, frequently eat upwards of 80 oz. of solid food, containing $6\frac{3}{4}$ oz. of flesh-

formers, nearly 4 oz. of fat, and 24½ oz. of starch, the carbon being about 15½ oz. In fact, the contractor who engages them knows that their working power is gauged by their appetite, and the men whose appetites fail are not unfrequently discharged as unfit for employment. "I send round my clerk," says a contractor, "when the men are getting their dinners, and those who can't eat, he marks with a bit of chalk, and he sends them about their business." Right in principle, though not humane in practice. When unusual work is required, an unusual supply of food must be given. In the late Schleswig war, the meat was doubled on actual fighting days, and the soldiers then fought on a navvy's allowance of nearly 7 oz. of flesh-formers. In Holland there is, or there was lately, a singular economy in this respect. The Dutch soldier in garrison was fed like a pauper, with 3 oz. of flesh-formers daily, but his war ration brought it up to nearly 4½ oz.; "Dutch courage," or fighting with a full stomach, has thus a physiological explanation.

	Solid Food.	Flesh-formers.	Starch Equivalent.	Mineral Matter.	Carbon.
	Oz.	Oz.	Oz.	Oz.	Oz.
English soldier (Crimean ration) . . .	41·0	4·5	19·0	0·6	10·3
English soldier (Kaffir ration) . . .	47·4	5·7	21·1	0·7	11·6
French soldier (Crimean War)	59·7	6·5	26·8	0·9	14·4
Prussian soldier (Schleswig War, 1864) . .	48·0	5·9	22·7	0·8	12·4
Austrian soldier (War ration . . .	38·6	5·1	26·2	0·5	14·2
Russian soldier (Crimean ration) . . .	36‘6	4·7	16·0	0·6	8·7

From what has been already said, it will have been gathered that we are of opinion that 2 oz. of flesh-formers may keep a man alive when at rest; but that 3½ oz. are required to preserve his health with moderate exercise; while 6 oz. are requisite for a hard day's work. The difference between the two last numbers gives us 2½ oz. as the quantity of flesh-formers necessary for hard productive labour, or for exercise such as walking twenty miles daily, over and above the 3½ oz. used for keeping the body in health. In the functions of bodily activity there are four kinds of work

which a man has to perform: (1) Vital work; (2) Heat work; (3) Mechanical work; (4) Mental work. The vital work refers to that proceeding in the body, in the direction of which man is more or less an unconscious agent. The heart beats, the blood circulates, the lungs play, digestion, assimilation, and secretion go on by an inner directive movement independent of the man's will. On these operations a large amount of work is expended. We can calculate it with accuracy in the case of the human heart. This important organ is continually propelling blood with force through the arteries, never ceasing, day or night, in its labours. If we suppose that the efforts used by it in propelling blood were all concentrated in raising its own weight, then its daily work is represented by the astonishing number that it might raise its own weight about ninety miles high. But the conscious man in which the heart resides can, with a hard day's work, only do as much as is represented by raising the weight of his own body one mile high. It follows from the investigations of Haughton that the heart, weighing only $9\frac{4}{5}$ oz., does one third of the daily force of the whole frame, which weighs 150 lbs. It labours incessantly, and can tire out 200 times its own weight of the stanchest muscles of the body. The mechanism arranged by Divine power, and placed beyond human control, performs its functions with that wonderful perfection which is observed in all the works of the universe carried on independently of man's will, while the less perfect working of the muscles of the body is no doubt owing to man's inability to use to the best advantage the machine entrusted to the guidance of an imperfectly instructed and erring will. After what has been said, it will not be surprising to find that rather more than one half of the flesh-formers in food are required for the work of life, leaving only about one half for productive labour. With regard to the "Heat work," we have little to do at present, for this is chiefly got out of the heat-givers, or substances not containing nitrogen. It is by the transformation of the organic tissues that the vital, mental, and mechanical works are performed, or that the immaterial powers are manifested through matter to the world. The tissues in changing are oxidised, or partially burned, and are excreted in the form of urea. This oxidation may produce heat, and we know that so much heat as would raise the temperature of a pound of water by one degree Fahrenheit is equivalent to the mechanical effect produced by allowing 772 lbs. to fall through the space of one foot. So that the change of tissues may produce mechanical effect in the body instead of heat. This

is the essential physical difference between a plant and an animal. Though plants have certain mechanical effects to produce, these are quite subordinate to their general purposes in life, while the conversion of chemical affinity into mechanical effects is the characteristic of animal existence. The potential energy of the food and of the oxygen of the air produces the muscular energy and heat of the animal.

It is not quite certain, but it is nevertheless highly probable, that under ordinary circumstances the force expended in the labour of an animal is derived only from the potential energy in the flesh-formers of food, and in the oxygen which transforms them from organic tissues into urea, which is the chief excretive matter of the system. All experience teaches that work can only be got out of an animal by nitrogenous food, and that the amount of available labour is proportional to the quantity of flesh-formers consumed in the food. Let us compare the labour of a horse and of a man in this respect. Seven men can do the work of one horse, according to the usual calculation, or the labour of a man equals one seventh of that of a horse. A strong horse may be well sustained when at rest with 15lbs. of hay and 5lbs. of oats; but if real work is to be got out of the horse, 16 lbs. of oats are supplied. Calculating from the known composition of hay and oats, the horse receives 27 oz. of flesh-formers when at rest, and 24 oz. additional when at work. If the horse be at work on a railway, it co-operates with an excavator, or "navvy," who we have shown eats $6\frac{3}{4}$ oz. of flesh-formers, of which $3\frac{1}{2}$ oz. are required for his bodily subsistence in health, and $3\frac{1}{4}$ oz. are available for work. So that the real working food in the case of the horse and of the man is as $3\frac{1}{4}$ oz. are to 24 oz., or as $1 : 7\frac{1}{3}$, which is very nearly the proportion of their working capacities, as ascertained by experience. In the case of the horse, the working power is got out of plants; in the case of the man, it is derived from a mixed animal diet. Yet such a diet is not essential to man. The miners in Chili, who work like horses, live nearly like them, for two loaves in the morning, boiled beans in the day, and roasted grain at night constitute, according to Darwin, their ordinary food. Even distinguished physiologists doubt whether there is enough potential energy resident in the wasting tissues of the body to account for the labour of a man. This hesitation is groundless, and can only arise from the fact that few calculations have been made on the subject. We find that the daily waste of tissues secreted as urea by the kidneys, would, after supporting fully all the vital functions of the body, and the limited mental functions of a labourer, enable him to execute such mechanical labour

as would raise about one million pounds to the height of one foot. But it has been found that the hardest labourer can, by continuous work, only raise daily 792,000 lbs. to the height of one foot. Though man uses his powers much more economically than a steam-engine, it cannot be supposed that he husbands every part of it, and therefore an excess of available power was to be looked for. It is, however, in this excess that physiologists have found their stumbling-block. They have perceived that heat, as well as mechanical work, is produced by the waste of flesh, and have therefore hesitated to admit a separate class of heat-givers in food. A carnivorous animal is often obliged to depend upon its own tissues as a source of heat during its long-sustained fasts. Even in confinement the hyena is seen moving from side to side of its cage, not in impatience of its imprisonment, but by exercise to transform its tissues, and to allow part of the potential energy of the flesh and oxygen to pass into heat, so that the temperature of its body might be sustained. So a man in a cold day rubs his hands and beats together his arms, or dances with his feet. It is known, as the result of experiment, that the temperature of the muscles rises during contraction. In tetanus the heat of the body is raised from 98° to 111° on account of the muscular convulsions producing heat. If the transforming tissues do not produce mechanical power to the full extent, they pass the unused force in the form of heat. Darwin tells us, that when in the Pampas he lived tolerably well, though confined to a meat diet, "but felt that it would only agree with him with hard exercise." Yet he found the Guachos living for months on nothing but beef, "although they eat, I observe, a very large proportion of fat." The Guachos were carnivorous, and like the carnivora required heat developed by exercise, unless they had fat to keep up the heat-work of the body independently of the transformation of tissue. And this explanation accounts for a remark of Sir John Richardson, in his 'Arctic Travels:'—"When people have fed for a long time solely upon lean animal food, the desire for fat becomes so insatiable that they can consume a large quantity of unmixed and even oily fat without nausea." So that we are brought back again by these remarks to the necessity of heat-givers as constituents of food, which we were afraid our readers might lose sight of in the length of our remarks on the production of mechanical effects from the transformation of the organised flesh-formers. To insist, again, upon the absolute necessity of a proper and judicious admixture of the different ingredients of food, we might quote Moleschott's estimate,

that the average complete food for an adult man in good health should contain, in 1000 parts—

Water	812·07	parts.
Flesh-formers	37·70	„
Fat	24·36	„
Starch, sugar, &c.	117·17	„
Mineral matter	8·70	„
	1000·00	„

The Chinese are the only nation who *manure* their blood by separate mineral ingredients not found in the food, for they carefully incinerate the husk of rice and mix the ashes with the grain.

We have hitherto confined our remarks to adult able-bodied men, and cannot find space to discuss the dietaries of the young and of the aged. The proper amount of nutriment in the food of children is a matter of such surpassing importance that we feel much inclined to dwell upon it in detail. We must content ourselves, however, by observing that after having examined and discussed the dietaries of a large number of public schools, containing resident children from seven to fourteen years of age, with an average of about ten years, we arrived at the conclusion that such school dietaries ought to have the following daily nutritive value—

Flesh-formers	3·3	oz.
Fat	1·6	„
Starch, &c.	11·4	„
Starch equivalent of heat-givers	13·8	„
Mineral matter	0·6	„
Carbon in the food	8·2	„

The ratio of flesh-formers to heat-givers, as expressed by the starch equivalent, is in the dietary of school children as 1 : 4·2, while in that of adults it is as 1 : 5. But when we recollect that the bodies of the young have to grow as well as to be sustained, we understand why the proportion of flesh-formers is greater in their case than with the full-grown man. Dr. E. Smith's work, termed 'Practical Dietary,' affords useful hints on this subject.

The various numerical results presented to the reader may convince his mind without giving him the power of embodying them with practical applications. If this be the case, the reason is to be found in our deficient systems of education. We are not taught, as we should be, the useful practical lessons of life, or how to apply the teachings of science to our every-day wants. We forget the saying of Milton—

"To know
That which before us lies in daily life
Is the prime wisdom."

Nor shall we attain the benefits which these discoveries of science are calculated to bestow upon mankind until women are taught domestic economy rationally, not empirically, as a part of their education. Women are the feeders as well as the mothers of men, and if our ladies would but devote a small fraction of the time which they expend in exercising their fingers by playing scales on the piano, in cultivating a knowledge of the science of life, it would serve them well when they experience their "joy that a man is born into the world;" they would then more seriously fulfil the solemn duties which they have to perform, would largely diminish the amount of infantile mortality, and would give to the world successive generations more fitted to accomplish the purposes of the great God who created them. As part of this rational education an acquaintance both with the science and art of cookery should rank high in importance. Paley says, "As the state of population is governed and limited by the quantity of provisions, perhaps there is no single cause that affects it so powerfully as the *kind* and *quality* of food which chance or usage has introduced into the country." Count Rumford observes,—"It seems to me more than probable that the number of inhabitants who may be supported in any country upon its national produce depends as much upon the state of the *art of cookery* as upon that of *agriculture*." There is much more philosophy in the last remark than might be discovered by a superficial consideration of it. If that man be a benefactor to his country who makes two blades of grass grow where one grew before, so equally is he who, by a judicious selection and cooking of food, enables two men to be fed for the same sum that one was fed before. If the one practically extend the territory of his native land, the other, by husbanding its resources, enables a larger population to be fed and retained within it, instead of being driven out in a forced emigration by want of the necessaries of life. Let us illustrate this point. In the Irish famine the author of this article was one of the Government Commissioners, and had his attention directed to the necessity of feeding a large population on a very limited supply of money. Such questions as these naturally arose to the mind and were then discussed—Does the market price of flesh-formers vary much in different kinds of food? Does the price of heat-givers and of carbon show large variations? if they do, what is the method of combining them so as to make a shilling feed six

people, when it formerly fed only three? Luckily such considerations as these, which, from their novelty, obtained little attention in the Irish famine, have had an intelligent application during the late cotton famine in Lancashire. Suppose, in illustration of our meaning, that we write down the weights of a few kinds of food which would be necessary, if taken alone, to give a weekly supply of 28 oz. (4 oz. daily) of flesh-formers to an able-bodied man. They are as follows, with their retail market price in Edinburgh on January 2nd, 1865:—

			s.	*d.*
147 oz.	Butcher's meat, costing	. . . .	6	1
700 „	Fresh milk	„	14	7
93 „	Cheese	„	3	0
127 „	Split peas	„	1	2
200 „	Flour	„	2	1
341 „	Bread	„	2	8
175 „	Oatmeal	„	1	4
2000 „	Potatoes	„	8	11

Let us, in like manner, find out the weight and the cost of giving 140 oz. of the starch equivalent of heat-givers required for a week's nutrition of an adult. The numbers now are:—

			s.	*d.*
416 oz.	Butcher's meat, costing	. . . .	17	4
1120 „	Fresh milk	„	23	4
224 „	Cheese	„	7	0
221 „	Split peas	„	1	10
190 „	Flour	„	2	0
298 „	Bread	„	2	3
183 „	Oatmeal	„	1	4
616 „	Potatoes	„	2	9

The great difference between the numbers in these two tables shows that it was never intended that man should live on one kind of food, but that he should make proper mixtures of them, in order that he might supply the deficiency in one ingredient by an abundance of it in another kind of food. Thus potatoes, which are a dearer food than meat for the supply of flesh, are far cheaper as a source of heat to the body, so with this view we associate them in our meals. Cheese gives us cheap flesh but dear fuel, so we take with it bread, which supplies the latter economically. Potatoes lay on flesh at an extravagant rate, so with potato soup we mix peas, which add to its nutritive value and to their economy.

The making of palatable mixtures of various kinds of food forms the art of cookery. It is a maxim as old as Hippocrates, that "whatever pleases the palate nourishes," and it

is only when taste becomes depraved by indulgence that the pleasure of eating becomes contemptible. Many dishes of the cook are full of scientific significance. As an illustration, let us ask, why are small square pieces of bread, fried in lard, sent up with vegetable soup? Because starch requires to be mixed with saliva before it is converted into sugar in the act of digestion, and as the soup would pass to the stomach without mastication, fried or hard bread protected from the water by fat, so as to prevent its softening, is taken along with the soup, and compels mastication and a flow of saliva. But if cooks exhibit important scientific applications, they often err from ignorance of science.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

REORGANISATION OF THE VETERINARY SCHOOLS IN FRANCE.

Article 1. — The object of the Imperial Veterinary Schools of Alfort, Lyons, and Toulouse, is to educate veterinary surgeons.

Article 2.—The veterinary schools receive only *interne* students, either French or foreign. The numbers to be admitted in each is fixed by the Minister.

Article 4.—The amount of the board and lodging is 450 francs (£8) yearly, to be paid quarterly, and in advance.

Article 5.—The students are to wear a uniform, the pattern of which is determined by the Minister. They are not allowed to modify this uniform in any of its parts, not even when they wear it out of the school.

Article 6.—The admission is by concours, in conformity to the rules stated.

Article 7.—None can be admitted under seventeen nor above twenty-five years of age, on the 1st of January of the year in which the concours takes place. No dispensation in reference to age can be granted.

Article 8.—The demands for admission must be made to the Minister, either direct or through the medium of the

prefect of the department where the candidate resides, and must be accompanied by the following documents, 1st, the certificate of the birth of the candidate; 2nd, a certificate of a doctor in medicine, stating that he has been vaccinated, or has had the smallpox, and that he is free from scrofula or any other analogous disease; 3rd, a certificate of good moral conduct from the local authorities; 4th, an undertaking, on stamped paper, guaranteeing the payment of the board, &c., during the time the candidate is at the school. For foreign candidates, or when the parents are not residing in the same locality, a correspondent domiciled in the locality, or in France, all these documents must be duly legalised. 5th. If the candidate is more than twenty years of age, a certificate is required of his having satisfied the conscript or recruiting of the army.

Article 9.—The candidates are to be examined in the French language, arithmetic, geometry, geography, and history. The programme of the examination is fixed by the Minister, and published in the *Moniteur*, at least three months before the time of the concours.

Article 10.—A special jury is appointed for each school for the preliminary examination. This jury is composed of the Inspector-General, President; the Director, who presides in the absence of the Inspector, the Professors, and the Chiefs of the service. The latter have only a consultative vote.

Article 11.—Every year, on the 1st day of October, the jury will meet to examine the candidates according to the rules laid down in Article 6.

Article 12.—The jury write a detailed account of the examination of each candidate, and on this is written a minute of the proficiency of the candidate, so as to class him in the order of his merit. This is immediately transmitted to the Minister, who fixes the number to be admitted in each school. Meanwhile those declared competent by the jury are provisionally admitted into the school by the jury.

Article 14.—The time of study at each of these schools is limited to four years. Nevertheless, the Minister may grant, on the proposition of the Council of the school, to students who are not competent to pass to the superior class, the favour of recommencing *de novo* their previous studies for another year; but this favour can be granted only once during the whole period of their studies, and consequently the whole period of the studies cannot exceed more than five years, unless in case of sickness, or other circumstances of great weight.

Article 15.—The instructions are divided into six chairs. These consist of geology, botany, herberization, elementary zoology, physics, chemistry, general anatomy, the study of the organic elements, descriptive and comparative anatomy of domestic animals, the physiology of the same, and the study of their external conformation; dissections, the general pathology of internal maladies, and the special pathology of surgical maladies; materia medica, therapeutics, and pharmacy; surgical operations, hygiene, and pathology of shoeing; the clinic of external and internal maladies, the practical clinic of the hospitals, elements of agriculture, of hygiene, zootomy, the practical study of domestic animals in fairs and markets, commercial and medical jurisprudence, the practical study of defects and vices constituting unsoundness. The programme and division of the studies are fixed by the Minister.

Article 16.—The veterinary schools are managed under the authority of the Minister and the superintendence of the prefect of the department, by the director, and a council. The director is appointed by the Minister.

Article 18.—A chaplain is attached to each school. In case a certain number of students are of a different creed to the Roman Catholic, measures are taken to ensure religious instructions by a clergyman of their own religion.

Article 19.—The staff in each school is composed of the director and professors of the six chairs into which the instructions are divided, the chiefs of the service, three in number—their duty being to assist the professors—and a master of grammar.

Article 21.—The professors and the chiefs of the same are appointed by competition or concours.

Article 23.—There are, besides, attached to each school an accountant, who is also cashier, and has the buying and surveillance of the material, &c., of the schools; a managing guardian of the stores, a superintendent over the students, and as many subaltern *employés* as may be required.

Article 25.—The service of the medical attendants is regulated on the proposition of the director to the minister who appoints him.

Article 28.—The inspector-general, appointed by the Minister, is charged to give advice in all cases concerning either the instruction, the administration, or the staff. The inspector-general has to visit each veterinary school at least once in each year, inspect every part of the same, receive reports on the attendance and conduct of each student, and make a detailed report of his inspection to the Minister.

Article 29.—The council consists in each school of the director, the professors, and the senior chief of the service, who acts as secretary.

Article 31.—The council meets on the convocation of the director, who fixes the time and place of the meeting. The decisions are submitted to the approbation of the minister, but may be provisionally acted upon in cases of urgency; provided, however, that they are not attended with any expense.

Article 34.—At the end of each half year the director forwards a report to the Minister on the number of the students, a summary of their studies, the progress they have made, and their moral conduct individually. Copies of these notes are transmitted to the parents of each student, and to the prefect of the department: the Minister of the War department, if for the military; to the Minister of the Marine, if for the colonies.

Article 55.—Students who after their last year of study have been recognised by the jury constituted according to Art. 10 as competent to practise veterinary medicine, receive on their demand a diploma, for which they are charged 100 francs.

This decree is dated 11th of April, 1866, and signed "Napoleon."

We have only extracted these clauses, which seemed to be of general interest, leaving out those referring to the details of the administration, &c.

It will be seen, in the first place, that the preliminary xaminations are more extensive. Formerly they werel imited to the French language. The other studies are also more extensive; and although shoeing is not forgotten, it is now confined to the hygiene and pathology of it. The practical knowledge, and the being able to make a shoe, are no longer required. The granting of the diploma, which used to be a public ceremony, is also abolished, it being now granted on demand. The remanding of those who are not found competent on examination to pass to another class is now confined to one year, so that the whole period of study can only be five years. The examinations are by the directors and the professors, which, as they are paid by fixed salaries, is without prejudice. *Externe* students are abolished, as all students are to be within the school. This system of *interne* in a school of medicine is not without its defects. It is apt to take away all independent judgment, and to render the student a mere machine; and when he leaves the school, and is left to his own resources, he is timid and doubtful of his judgment and

that of others; he hesitates at every step of his practical career, particularly if it differs from what he has been taught. The object is to keep young men at that age, when the mind is being formed, shut up for the purpose of study, and away from all society. This, however, renders them inert and timid, from a want of the knowledge of the world.

The veterinary schools which are organised differently, and allow too great a liberty, have also their defects, inasmuch as the students are entirely left to themselves. The weak and evil-minded ones neglect their studies, and spend their time and money in debauchery, and thus wreck their future prospects and the hopes of their friends; notwithstanding, the latter system seems preferable to the former, which is proved by the results in the medical schools and the universities in this country.

ROYAL COLLEGE OF VETERINARY SURGEONS.

At a Special Meeting of the Court of Examiners, held November 16th, in accordance with the resolution of the Council to suspend the by-laws relating to the examination of candidates for the diploma of the Royal College of Veterinary Surgeons who may hold the Highland and Agricultural Society's Certificate, the following gentlemen received the diploma of the College, and were admitted members of the body corporate, viz.—

Alfred Job Owles . . .	Veterinary Surgeon to the Staff, Aldershot.
John M. Wilson . . .	Military Train, Curragh, Kildare.
George Fleming, F.R.S. .	3rd Hussars, Aldershot.
James Lambert . . .	17th Hussars, Aldershot.
George A. A. Oliver . .	Royal Artillery, Portsmouth.
James Storrar . . .	Chester.
William Woods . . .	Wigan.
William Williams . . .	Bradford.
Richard Lord . . .	Halifax.
William Dobie . . .	Birkenhead.

WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE regular quarterly meeting of this Association was held at the Angel Hotel, Cardiff, on Wednesday, 17th October.

Mr. Bodington, President, occupied the Chair.

The following members and other gentlemen were present, viz., Mr. Dring, Bath; Mr. Barrell, Keynsham; Mr. J. M. Broad (*vice-president*), Bristol; Mr. Broad, Bath; Mr. James, Corsham; Mr. James, Haverfordwest; Mr. Geake, Canton; Mr. Garsed, St. Fargus; Mr. Wilkes, Newport, Monmouth; and Mr. Hibbert, Student.

The President having read letters of apology from Professor Spooner, Mr. Gregory, Mr. Greaves, and R. H. Dyer, the Hon. Sec., expressing their regret at not being able to attend, the meeting proceeded to business.

Mr. James, Haverfordwest, and Mr. Wilkes, Newport, Monmouth, were elected members of the association.

The minutes of the previous meeting having been read and confirmed, the President read the following inaugural address.

MR. VICE-PRESIDENT AND GENTLEMEN,—The position I now have the honour and privilege to occupy renders it incumbent on me to offer a few observations upon this our first meeting in the second year of our society's existence. I shall not, however, detain you long, as I well know the anxiety you must all feel, that the paper announced for discussion to-day, by our friend Mr. Broad, should receive every possible attention.

First, allow me to express the gratitude and pride I feel in occupying this chair to-day; and to return my hearty and sincere thanks for the high, but undeserved compliment you have paid me. I must, however, candidly confess that I am at a loss to explain satisfactorily to myself why you elected *me* your president, as I see around me now, as on the day of my election, those whose higher professional attainments, meritorious services, and exalted position, render them peculiarly fitted for the office I now hold. If it was on account of the interest I took in the *formation* of this society (and what am I to suppose otherwise?), then with confidence I assert that no one has its progress and welfare at heart more sincerely than I have. And yet this very fact makes me more fearfullest its well-being should suffer from the lack of a more able and expert navigator at the helm. This, however, I will promise, that nothing within the scope of my ability shall be withheld that can possibly conduce to its prosperity, or to render our "meetings not only agreeable and profitable, but intellectual and scientific." Still, you must pardon me if I remind you that without your undivided support, without entire unanimity of purpose, the best individual efforts must inevitably fail. I ask, therefore, your indulgence during my year of office. I have not forgotten how ably, courteously, and zealously my predecessor presided over us; and that the success of this association must, in a large degree, be attributed to his influence; and I will honestly tell you, I very much regret he is not where I am to-day, for I feel persuaded that he who was in reality the founder of this and all other Provincial Veterinary Medical Associations, and who had so ably nursed this in particular from the day of its inauguration until now, and during its first year rendered it what we now see, would have been the most appropriate person as

president for the ensuing year. However, gentlemen, I am in your hands, and in the discharge of my presidential duties, I shall aim to follow the good example set by our friend Mr. Raddall.

Let us now review our work of the past year, and I think a few statements will suffice to show that the *West of England Veterinary Medical Association* is, in the strictest sense of the word, "a success:" that we have reason to be satisfied with the past, and a good prospect is before us for the future. I am led to this conclusion; first, on account of the number of members enrolled; secondly, on account of our standing in a financial point of view; and last, though not least, because of the benefits it has conferred upon its members.

The formation of this Association is of too recent a date to require of me a lengthy or detailed history of its origin. You all, no doubt, well remember that our first meeting was at Plymouth, in July of last year, and there, in spite of all that had been prognosticated by those of "ill-omen," that little gathering must have been to all sober thinking men, an earnest of what its promoters intended it should become. For my part, I never had any doubt of its success; and if I had, the doings of that day would at once and for ever have dissipated it. From that time to the present, at Exeter, Bristol, Taunton, Bath, and now at Cardiff, we have had our meetings and added to our numbers men of the right sort; and it is a source of great pleasure to me to be able to announce that at present we have about thirty members. At first thought, perhaps, you may be ready to exclaim, Is this all that we have done? and that the number is small. But when you reflect that our society was established in a year of extraordinary difficulties, I think we must consider this to be satisfactory. I mean by extraordinary difficulties the fact of the unfortunate appearance of the cattle plague, which has so universally occupied the time and attention of the profession. I well know from experience the great and serious inconvenience, and, in many instances, impossibility, for veterinary surgeons to leave their homes; nevertheless, and with pride I say it, for all this our meetings have been well attended; thus showing clearly there is not that lack of combined effort, the existence of which one might be disposed to fear. I think, too, it is a source of congratulation to find our society has attached to it the names of no less than six gentlemen whose countenance and support as honorary associates must be thought most flattering. Thus, during our first year, we have a list of nearly forty members.

Secondly, ours is a success in a financial point of view. I merely mention this fact in order to enable me to say a few words as to the investment of our surplus capital. I am informed by our indefatigable secretary and treasurer, Mr. Dyer, that after defraying all our expenses, we have a balance in hand of not less than twenty pounds. Now, being in this favorable and somewhat novel position in this our first year, I do think we might venture to devise some good method of using the money (or a portion of it, at any rate) in forwarding the interests of those who have a peculiar claim upon our sympathy and regard.

We have, I think, a right to suppose that last year was a fair example of our working expenses, and if that be correct, half of the amount now in hand will be ample to discharge our liabilities for the ensuing year, Now, no doubt, gentlemen, you are all aware that a society of veterinary surgeons has lately been established called "The Veterinary Mutual Defence Association," and it is one, I trust, that will meet with the support of the whole body of the profession. Well, it occurred to me that in connection with it might be established a fund for the purpose of grants of a pecuniary or educational nature being made to widows and orphans of subscribers left in necessitous circumstances, an idea which I now find has been embodied in Rule XII of the Veterinary Mutual Defence Society. Now I think it would be a very graceful act of ours to hand over the sum of £10 as a donation to that society, and yearly to increase that donation as we become more successful. I merely suggest this, and leave it for your more mature consideration, and also for the consideration of kindred societies. I feel it needs no pleading of mine to recommend such an institution to your favorable consideration. What more pleasing privilege of all Christian duties than to assist the widow and the orphan?

"Thy neighbour? 'Tis the heart bereft
Of every earthly gem;
Widow and orphan helpless left;—
Go thou and shelter them."

Thirdly, ours is a success on account of the benefits it has conferred upon its members. It has been said, and to my mind *well* said, that, "there is nothing so revolutionary, because there is nothing so unnatural, and so convulsive to society, as the strain to keep things fixed, when all the world is by the law of its creation in eternal progress; and the cause of all the evils of the world may be traced to that natural but most deadly error of human indolence and corruption, that our business is to preserve and not improve. It is the ruin of us all alike, individuals, schools, and nations."

One of the benefits this association has conferred upon its members is, it has forced upon them the utter impossibility for things to remain as they were, and that minds filled with noble aspirations, and thoughts of a golden hue, are not any longer to be permitted to rust and "spoil like bales unopened to the sun." It has taught them rather, that it is their duty, nay, their highest privilege, to impart to a brother their opinions and experience in scientific research. It has clearly demonstrated to them that, "to push on is the law of nature, and you can no more say to men and to nations than to children, 'Sit still and don't wear out your shoes.'" Again, these meetings have awakened us from our jealous slumbers; they are fast bringing us out of superstitious and ignorant darkness into the brilliant sunshine of science and learning; they are dissipating the green film that has been so long on the surface of the waters, so that we are no longer a "stagnant pool;" and they are of necessity showing all obstructives to progression that,

"Life is but a source of labour,
Every one's his task assigned,
We must each assist our neighbour
When we see him lag behind;
We must strive by education
Man's condition to improve,
And bind men of every station
In a bond of mutual love;
All must then be up and stirring,
With determination true;
Young men, old men, rich men, poor men,
Ye all have your work to do."

Another benefit it has conferred upon members is, it has brought them more prominently before the public; and to my mind this is not the *least* benefit bestowed. It is not so many years ago that as a body we were comparatively unknown and but little cared for; nay, the very fact that you were a veterinary surgeon was sufficient to shut you out from the pleasures and advantages of respectable and intellectual society; and many of our community, men of hononr, men of learning and integrity in their profession, have passed from us almost unrecognised, and their skill and scientific attainments have been buried with them. Why was this? simply because no opportunity was afforded them to exhibit to the world their worth and usefulness. They were used by the public as mere machines; but, thanks to our veterinary medical associations of the present day, we are more favoured than were our forefathers; our meetings in different towns have been well received; those in high municipal authority in those towns have nobly come forward to assist in our work; and reports of our doings and sayings have, through the medium of that glorious institution—"The Free Press"—gone forth to the world as an earnest of our desire to become useful citizens, and the result has already been, an almost universal cry of admiration at the advances we have already made and are daily striving to make. It is by efforts such as these, combined and determined, that we can hope to hold that honorable

position in the eyes of the public which I am sure is the wish of every member here, and which I hesitate not to say we at least endeavour to deserve.

Again, it has bestowed upon its members individual benefits. I am, happily, not one of those who generally meet trouble half way, or who think every obstacle one meets with in our path of duty is necessarily insurmountable. Yet, occasionally, I confess that I have felt somewhat disheartened and disappointed at the replies I have received from those whom I have ventured to solicit to become members of this association: being told by them, "Oh! it's all nonsense; it's a great waste of time;" and "they do not see any good in the thing," and so on. Well, gentlemen, I am disheartened on account of our society, and disappointed that they who make these remarks should be so adverse to the best interests of the profession to which they belong; and I have come to the conclusion that he who objects to meet his brother in well directed and calm professional debate, has himself nothing to impart, so that really nothing is lost. However, we must not blind ourselves to facts. There are, undoubtedly, many such persons, and all I can say is, I am deeply sorry for them, for I am fully convinced the time is fast approaching when to hold aloof from these gatherings will be suicidal in the extreme.

Had it not been for the existence of this association, we here present, in all probability, should have lived and died unknown to each other personally. And who can tell what friendships may be sealed this very day? what petty jealousies removed, or what new mental vigour acquired, and usefulness derived from the scientific paper to be read and discussed? To-day, perhaps, some long-existing distrust, some differences and prejudices may be wiped away for ever; thereby making us all of one mind. It is worse than useless to tell me that no advantage can possibly accrue from such meetings as these; and it would be an insult to your common-sense were I to dwell longer upon a subject which must be so patent to all.

Then, as these meetings engage us so completely in the pursuit of knowledge, that invigorator of the mind, let us continue our efforts of progression; and if we do this faithfully, and as it becomes educated men, we shall confer a lasting benefit upon our country and ourselves, and gain the esteem of those immediately surrounding us. The way to eminence is rough and steep, and many are the disappointments met with in the attempt to climb the height; but it is only to be firm and determined, and all will be overcome. Let the words of Sydney Smith never be forgotten by us when he says, "If any man have embarked his life in the pursuit of knowledge, let him go on without doubt or fearing the event; let him not be intimidated by the cheerless beginnings of knowledge from the darkness from which she springs, by the difficulties which hover around her; by the wretched habitations in which she dwells; by the want and sorrow which sometimes journey in her train; but let him ever follow her as the angel that guards him, and as the genius of his life. She will bring him out at last into the light of day, and exhibit him to the world comprehensive in requirements, fertile in resources, rich in imagination, prudent and powerful above his fellows in all the relations and in all the offices of life."

In conclusion, gentlemen, allow me briefly to direct your attention especially to two subjects, in which we are all of necessity deeply interested. The first is, "The Mutual Defence Association." Let me now ask you to take the subject into your immediate and individual consideration. Its objects have been so well set forth by those more able than myself, and its claims upon you are so palpable, that they need no further comment from me. Its worth is manifold. I would only remind you once more that this and all other works of the kind can only be perfected by *combined* efforts. It must be a "long pull, a strong pull, and a pull all together." Surely you will not allow such an institution to pass you without giving it support. Think over this matter well. The work has been well commenced; it is in good hands, and I sincerely trust, for the sake of the profession at large, it will receive that support from this society, individually and collectively, it so undoubtedly merits. Our best thanks are, indeed, due to those who are its promoters.

Lastly, I would wish to claim your attention to a proposition of my own, viz.:

that a congress of all the veterinary medical associations be held in 1867; and I am proud to see that the editors of that useful and honorably conducted journal the *Veterinarian* have honoured me with a notice of it; and still more pleased am I to find that it meets with their approval. I hope, too, it has your sanction. I can see much good likely to result from such a gathering; nor is it difficult to carry out; it only wants well directed energy and the thing is done. But I have detained you so long I will not say more than that it is my full intention to take the earliest opportunity of bringing this subject more fully before the profession in our monthly periodical, when, I trust, sufficient will be advanced to secure your aid and co-operation, as well as that of all other veterinary medical associations. I merely throw out the hint now, and hope others will come forward and assist in perfecting what I have proposed.

At the close of the President's address, which was well received, and for which the thanks of the members were given him, Messrs. Dring and Barrell requested him to forward their names to be enrolled as members of the *Veterinary Medical Defence Association.*

Mr. J. M. Broad read the following essay on "Vivisections and Operations as performed at the French Veterinary School at Alfort," which awakened an animated discussion, and a vote of thanks was unanimously awarded to him for it.

Mr. President and Gentlemen,—The subject of vivisections as practised in France, is one that has within the last few years provoked much discussion among many of the most scientific men of the day. The question is, "Vivisection, is it necessary or justifiable?" This I do not intend in this short paper to discuss, but to confine myself to the operations as generally practised by our veterinary brethren on the Continent.

In introducing the subject of vivisection for consideration, I do not think I can do better than quote an interesting and concise letter from the *Veterinarian* for 1846. It will give you an idea of what vivisection was at that period.

A correspondent says, "In the present age of refinement in every department of science, and more especially in those in which the principles of humanity are concerned—be they for man or beast—it might naturally be expected that in our public institutions those atrocious barbarities that have been too often perpetrated by our experimental physiologists would, in a corresponding ratio, have been improved or entirely laid aside." Far be it from us to discard the further adoption, or even the necessity of experimental physiology, for the more perfect, elucidation of our knowledge of the functions of the animal organism, but its indiscriminate adoption on every and in the most trivial circumstances, without any definite object being in view, or the experimenters themselves being possessed of that knowledge of structure and function which will enable them to understand these various phenomena, we cannot but earnestly decry and hold out to public sympathy.

But that the young and rising members of the veterinary profession are to be taught ankle deep in living blood by the vivisection of that class of animals on which they are in after life to exert their professional skill, the structure and functions of their various organs, is what cannot for a moment be admitted by any one knowing thoroughly the elements of science. I, on the contrary, affirm, with every confidence, that no benefit has ever been conferred on the practical veterinary surgeons except by experiments having been conducted by veterans in its study, and when these were had recourse to under the most judicious and well-directed considerations. And so it would appear in this present golden age of improvement, it behoveth the directors of one of the most liberal and valuable of our veterinary institutions still to adopt and promiscuously their 'young ideas' to be taught by the cruel uncalled for and abominable practice of vivisection. We have been induced to make the above remarks in consequence of observing in a work, published a few days ago, entitled, 'Notes and Remarks on

Jersey, France, and Italy,' by J. Brown Murdock, Esq., of Edinburgh. Mr. Murdock, from his long and intimate connection with the education of veterinary surgeons, and the enthusiasm and zeal with which he has made himself familiar with all the details of the schools in this country and elsewhere, when opportunity afforded, is especially qualified to judge, he having been for a long time the chairman of the Veterinary Committee of the Highland and Agricultural Society of Scotland, and as his description of the scene is short and graphic, we shall abstract it entire. "I visited," says Mr. Murdock, "the veterinary college at Alford, June 17th, 1844, distant a few miles from Paris; and on my way to the Palais Royal, where I intended to hire a cab to carry me to Alfort, I met a very intelligent old soldier. Upon mentioning to him my intention of visiting the institution, he asked me if I had an order for admission. Upon answering in the negative, he informed me that it was not shown to the public, but he very politely gave me his card as an introduction to the governor, to whom, he mentioned that, as an old comrade in the army, he was well known. It was fortunate that I had entered into conversation with this gentleman; his information being quite correct. I could not have seen the college without his introduction. M. Blanc, the Governor, was at home, and in the most polite manner went over the establishment with us. It is entirely supported by the Government, and, like all other institutions of the kind in France, completely under its control. There are seven or eight professors, and at present the number of students is 250. The course of study extends to four years, at the end of this period the students are taken on trial. If they pass the examination they obtain the diploma, but if they are unable to pass, they are remitted to their studies for another year, and then again examined; when, if again unsuccessful, they are dismissed from the college. The students all live in the building, and pay nothing. A large space of ground or small farm, and a botanic garden, are attached to the college, on which are cultivated several varieties of the most common agricultural productions, and the plants used in the different pharmaceutic preparations of the pharmacopœia. The institutlon also contains a large hospital for dogs, which was quite full at the time, and a museum of anatomical preparations, formed on a very extensive scale. The grounds around the buildings are tastily laid out and planted; and the day of our visit being fine, the students were grouped in shady places, diligently studying. I wish I could now bring my narrative of what I saw that day to a close. Upon entering into what appeared to be a place for dissection, I found myself surrounded not by dead but by living subjects. It was a building, or shed, open to the air on one side. Here lay six or seven living horses, fixed by every possible mechanical contrivance by the head and feet to pillars to prevent their struggling; and upon each horse were six or seven pupils engaged in performing the different surgical operations. The sight was truly horrible. The operations had begun early in the forenoon; it was nearly three o'clock when we entered the place, so that the poor wretches, as may be supposed, had ceased being able to make any violent struggles; but the deep heaving of the still panting chest, and the horrid look of the eyes, when such were remaining in the head, while the head was lashed to a pillar, was harrowing beyond endurance. The students had begun their day's work in the least vital parts of the animal; the trunks were there, but they had lost their tails, ears, and hoofs, and the operators were now engaged performing the more important operations, as tying up arteries, trephining the cranium, cutting down on the more sensitive parts, on purpose, we were told, that they might see the retraction of certain muscles by pinching and irritating the various nerves. One animal had one side of his head completely dissected, and the students were engaged in laying open and cauterizing the hock of the same animal when we entered. What I have thus described was the result of the observation of a few seconds, as I grew quite sick, and hastened away from this abode of cruelty.

I shall not insult the feelings, nor outrage the common-sense of my readers by dwelling upon the subject, or by using any arguments to demonstrate the non-necessity of such barbarities. I may, however, be allowed to remark that, having been induced through particular circumstances to direct my attention for many years to the teaching of the veterinary art, I can, without the charge of presumption, take upon me to affirm, that such practices are not more cruel than unnecessary in the teaching or in the practice of that science. Such, alas! is the melancholy state of affairs at the most noble veterinary institution in the world."

During my residence with Professor Reynal, the chief of the operating classes in the French school, I have had every opportunity of making myself thoroughly acquainted with all the operations, and particularly those upon the foot. The operations are different from those performed by the English, and their method of securing the animal particularly is far superior.

Firstly, I intend to run over the operations as performed by the class of students, or, as we will call them, the vivisectors, according to this table.

No. 1.

Make a shoe, and shoe off fore for Sandcrack.

1. Bleed from jugular, right brachial, and facial veins.
2. Insert seton in neck and chest.
3. Tracheotomy.
4. Tenotomy near fore and hind.
5. Sutures, various.
6. Fire region of kidneys.
7. Operation for quittor outside off fore.
8. Puncture cornea.

No. 2.

Shoe off hind foot.

1. Bleed from jugular and spur veins.
2. Setons along back.
3. Spaying of mare.
4. Amputation of tail.
5. Puncture colon.
6. Fire tendons of off fore.
7. Take off sole for canker near hind.
8. Puncture cornea.

No. 3.

Shoe near fore leg for Laminitis.

1. Bleed from jugular, foot, and inside fore leg.
2. Extirpation of off ear.
3. Œsophagotomy.
4. Amputation of penis.
5. Nicking.
6. Fire off stifle joint.
7. Take off sole for canker off fore.
8. Extract a molar tooth.

No. 4.

Shoe near hind foot.

1. Bleed from jugular and right thoracic vein.
2. Insert rowel in chest.
3. Ligature of carotid.
4. Lithotomy.
5. Castration.
6. Fire near stifle joint.
7. Quittor operation off fore (inside).
8. Extract molar tooth.

No. 5.

Shoe for Laminitis with No. 3.

1. Bleed from jugular, facial, and foot veins.
2. Setons in near hock.
3. Extirpation of right eye.
4. Tenotomy off fore and hind.
5. Ligature of canal of steno.
6. Fire tendons of near fore leg.
7. Quittor operation inside near fore.
8. Neurotomy, near fore, high, and low.

No. 6.

Shoe off fore with No. 1.

1. Bleed from jugular inside fore leg and facial.
2. Put setons in off hock.
3. Neurotomy, high and low off fore.
4. Amputation near ear.
5. Trephine frontal and maxillary sinuses.
6. Fire whole region of scapula near fore (outside).
7. Operation for quittor.
8. Operation for punctures off hind frog.

All the above operations are performed by six students on one horse.

There are eight horses provided by the college authorities twice a week. The operating students are sixty-four, eight to each horse; and each student has to perform the whole of the following operations. I have placed them on a diagram for your perusal. (*See preceding page.*)

I shall glance through these operations and compare them with those as practised in England. I must, however, say, that by far the greater number of them I consider useless and cruel.

We will take one horse, remembering that eight animals are under operations at once. Each horse has first to be shod by the students themselves, with various forms of shoes, and each foot has to be examined and passed by the foreman of the forge. This having been done, the horses are led into the operating room, and the students proceed in turn, first to bleed from the jugular vein. With reference to this operation, I do not see any objection whatever to it, as there cannot be any great pain given to the majority of horses; they do not move an inch, and it is an operation that can only be performed upon the living animal. Each student having bled and carefully tied up the vein, now proceed to bleed from the arm vein; No. 2, from the spur vein; No. 3, from the facial vein; No. 4, from the thoracic on the one side of the horse; Nos. 5, 6, 7, and 8, from the same veins upon the corresponding side. These operations I consider almost useless, but still admissible on account of their not giving rise to any great amount of pain, and certainly, from their being performed all through the summer, they must make the student expert with his lancet. No. 1 now performs tracheotomy, the rest of the eight students holding the horse and looking on. This, too, cannot be a very painful operation, and is certainly a very useful one. I must here say that a professor is present during the performance of these operations, and of course it is in his place to direct and to point out those badly performed. I say this, as it has been stated by Mr. Fleming, the prize essayist on vivisection, that the students are scarcely under the control of any one, though a professor now and then makes his appearance from the forenoon up to three o'clock. Professor Reynal, during the whole time I operated with him, was always there at five in the morning, and continued with us the whole of the day. After tracheotomy has been performed the whole eight students proceed to insert setons in various parts of the body. This is very cruel, and the animals evidently suffer very much, from the manner in which they kick and plunge. Perhaps the most painful are the long ones, those passed along the back. Rowels are now also inserted by two or three of the students; the animal nicked by two others; then the tail is amputated in two or three places. Some of the more formidable operations are now proceeded with, namely, castration of the female, cutting down upon an imaginary stone in the bladder, passing a ligature around the carotid artery, in the performing of which an important nerve is frequently included accidentally in the ligature, causing the animal almost to shriek with pain. Œsophagotomy is next proceeded with by one of the eight. The whole of these operations are performed whilst the animal is standing, but now he is hobbled and thrown. As the operations are slowly performed, it is generally about midday before the horses are thrown.

With reference to the operation for stone in the bladder, it is generally very satisfactorily performed. The penis is drawn by one student, and the bladder injected by another; a third cuts down upon the bladder through the perineum, and inserts the stone forceps to remove the imaginary stone. Castration of the female is an operation seldom performed, as we all know; and I consider it quite useless to allow students to maul about the poor animals in practising it. With reference to the operation of passing a ligature around the carotid, the professor first punctures it with a sharp knife, then the student having tucked his sleeves up, makes a longitudinal incision upon the place, and ties the two ends up again. The poor animal frequently bleeds to death before they can be secured.

The old-fashioned strap hobbles are still employed; but I consider them very inferior to the new or English method of hobbling. As I have before remarked, the means of securing the patient when down strikes me as very ingenious, and to be far superior to any other. The principal appliance they use is the *flat*

lunge (which you see on the table), and when this is properly used it is quite impossible for the horse to move, the great object being to get one leg across the other. Having fixed the horse, the students proceed with the operations of neurotomy, both high and low. In the college practice at Alfort a large number of horses are unnerved, as omnibus, dray, and cart horses, which, being lame, and not yielding to treatment, they are directly thrown down and unnerved; and this not only for navicular disease, but for ring-bone or ossified cartilages; and generally they do uncommonly well afterwards.

Neurotomy having been performed, the formidable French foot operations commence. The poor animal is fastened on his back, with all feet in the air, so that two students get at each foot, and commence to operate, supposing them to be diseased feet. First, a good deal of importance is attached to the quittor operation, as a large number of cases are under treatment at the college. Their chief object is thoroughly to remove all traces of the diseased parts, however deep they may be required to cut, until the bottom is reached, frequently taking three parts of a horse's hoof off, and rendering him unfit for work for months. I question if a great number of these cases ever pay for being kept. Before operating, a ligature is put round the fetlock-joint, and the student proceeds to take off an angular piece of horn on one quarter, and then he removes the lateral cartilage. They use drawing knives of a peculiar construction. The lateral cartilage having been carefully removed, a little tow is put in in its place, another pledget soaked in carbolic acid on the top, and the whole elaborately is bound up with broad tape. The whole of this is then taken off again, and another student goes to work, perhaps. Supposing a sandcrack to be upon the other side of the same foot, two angular grooves are cut down each side of the crack, and the whole piece of horn between is removed. These cases generally do well when well bound up with the carbolic acid, tar, and broad tape; and although, of course, the animals go a little feelingly, that is not minded, as a large number of the horses working in Paris are lame. Operations for pricks and stubs are now performed upon the feet. A stab is made on purpose, first right down the cleft of the frog into the foot; the operator then cuts carefully down, removing the horn as he goes, until he reaches the bottom of the puncture he has made. This again is dressed, and a leather sole put on the foot, and a shoe tacked on. The shoe is removed again, and then another student supposes the horse to have an incurable cankered sole. Cases of this sort are very common at the Alfort College. A large number of horses are daily brought from Paris by poor people, who have only one or two horses. They can be treated gratuitously at the college. Among these are a number with cankered feet. These are all in their turn put into the trevice, and dressed with the favourite carbolic acid; after which a little powdered sulphate of copper is sprinkled over, and a leather sole placed over all. Of course this disease is seen there in all its stages, from the mild to the severest forms. Carbolic acid is used to all the cases. When very bad, as they frequently are, the sole is seen covered with a great number of tumours.

But to return to our student; he is supposed to have a very bad case, in which he considers it necessary to remove the whole sole. This he accomplishes by cutting a deep groove all round the circumference of the sole, and then with the pincers he tears it out, thus inflicting a great deal of pain to the poor animal. The sole being thus removed, the foot is dressed with carbolic acid and tow, and the shoe tacked on again. I must not forget to state that there are four students to each foot doing all this at the same time, so that you have from this an idea of the pain the poor brutes suffer. They nearly all die during these operations; but I have known them to be alive the evening after. The other students now get about other minor operations, such as cutting gashes on the horse's thighs and shoulders, and then sewing them up in all sorts of ways. Another will stick a needle into the cornea of each eye. This is a very useless operation. Another will carefully dissect out the poor brute's ears, one after the other; another will extract the eyes, all being done systematically; another will amuse himself by drawing the animal's molar teeth, or punching them out; another will puncture the colon with a trochar; another will dissect out the

canal of steno, and put a ligature on it; another will trephine the frontal and nasal, and, in fact, all the sinuses of the head, and inject them just as if they were diseased, the poor thing struggling all the time. Most of the operations having been now performed, the firing is begun. Each of the eight students has separate parts to fire. Most of the eight horses are by this time dead, but generally two or three stronger than the others live through it all, the firing included. Not only are the legs fired, but every inch of the body, the most prominent parts being the region of the kidneys, the shoulders, the thighs, the head, &c.

If after all these operations any animals are still alive, they are now killed out of their misery, and carted away. So ends this cruel and heart-rending scene.

The treatment of bursal enlargement has been the subject of a great deal of experiment among the French veterinarians. The following is the manner in which this is frequently treated:—A small trochar is introduced into the sac, the fluid drawn off, and a little warm water injected by means of a small india-rubber ball. This again is drawn off, a solution of iodine injected, and allowed to remain in some time. The iodine sets up a great deal of inflammatory action, and the joint swells considerably. Some of the cases thus treated do well, but I do not think the majority do. The amount of swelling and irritation the iodine causes being so considerable, it takes so long a time for the parts to thoroughly recover themselves. Cold water is an agent extensively used at the Alfort College, particularly in the form of a douce. They have a regular fire-hose and tap connected to the water main, and this they employ in numbers of cases for poll-evil, fistulous withers, and such like diseases, keeping each patient an hour or so under the stream every morning. This, as well as all other operations, is done by the third-year students. A water bath is also attached to the establishment, which is used in many cases of lameness. Cases of tetanus are very common indeed, owing to the great number of horses that are injured in the feet, some way or the other. They are treated with small doses of hydrocyanic acid, and kept locked up quietly, and some few cases do well.

The Chairman, at the conclusion of the reading of the paper, remarked that amid all these barbarities there was some good, and it had struck him, on more than one occasion since he had left college, that there was a great lack of opportunities for the student to become accustomed to the various branches of his profession, which he finds so necessary when he engages in practice. There was many a young man who left his mother's apron strings for the purpose of entering the college, and who, therefore, had not obtained the practical advantages that would have resulted if he had at first been apprenticed to his profession and then concluded his studies at the college. He, consequently, commenced his profession without any practical knowledge, and in too many instances the older members of the profession did not assist him by their advice and experience. It was quite true that for the veterinary surgeon a perfect knowledge of the anatomy of the animal was necessary, but this, he was of opinion, could be obtained from the dead subject. With the barbarities of these vivisections he could not at all agree, but he did think that, at the English colleges, actual operations should be performed by the students under the guidance and direction of the professors. He considered the paper read by Mr. Broad to be a very valuable one, and showed a very extensive acquaintance with veterinary surgery.

A discussion then took place on the use of carbolic acid, which has only recently been introduced into veterinary practice. Mr. Bodington had used it with great success in many skin diseases. Mr. Broad, senior, of Bath, also advocated its use in those affections. The different methods adopted by the English and French Veteri-

nary Surgeons of removing canker from the foot were also described at some length by the Chairman, Mr. Barrall, Mr. Geake, Mr. Broad, and others. The tearing away of the sole of the foot, though a very painful operation, was considered by Mr. Broad the only certain method of cure. He also recommended riveting the hoof in cases of sandcrack, instead of the usual plan of cutting it away to excite a new growth.

The next meeting was fixed to be held at Salisbury on the 17th January, 1867, at Aubrey's Hotel,at 2 p.m.,when Mr. C. W. Gregory, of Bristol, will read a paper on "Fractures, their desirability and method of treatment of, in the Horse."

Some improved surgical instruments were exhibited by Mr. Broad, and the advantages attending their use explained.

A vote of thanks to the Chairman terminated the meeting.

At 4 o'clock the members of the society and friends dined together at the Angel Hotel, at the invitation of the President, who took the chair.

After the cloth was removed, the usual toasts were given and acknowledged, the company separating at an early hour, after having passed an agreeable evening in friendly and professional intercourse.

R. H. Dyer, M.R.C.V.S., *Hon. Secretary.*

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of the above association was held at the "Hen and Chickens" Hotel, Birmingham, on Thursday, the 18th of October.

The following gentlemen were present:—Messrs. C. Taylor, Nottingham; R. L. Hunt, Birmingham; R. Walters, Birmingham; W. P. Toll, Birmingham; E. Stanley, Birmingham; E. Price, Birmingham; E. Price, junr., Birmingham; Thos. Cave, Nottingham; H. Pyatt, Nottingham; T. M. Leech, Bakewell; G. Poyser, Ashbourne; R. Poyser, 8th Hussars; Wm. Burley, Leicester; E. Bailey, Leicester; E. Bailey, junr., Leicester; H. J. Cartwright, Wolverhampton; F. Blakeway, Stourbridge; J. Carless, senr., Stafford; H. King, Melbourne; Wm. Garrard, Ticknall; J. Markham, Rugely; Wm. Barry, Lichfield; C. Ison, Atherstone; J. Attwood, Willenhall; H. R. Perrins, Worcester; J. Rose, Warwick; J. Rushton, Dudley; Mr. Litt, Shrewsbury; W. P. Harber, Kidderminster; T. Greaves, Manchester; J. Lawson, P.R.C.V.S., Manchester; P. Taylor, Manchester; G. Morgan, Liverpool.

The President occupied the Chair.

After the reading of several letters, and the transaction of other preliminary business, the following gentlemen were unanimously elected members:—Messrs. Stanley, Burley, Hunt, Price, junr., Blakeway, Toll, Perrins, Rose, Harber, Markham, Walters and Litt.

A communication from the President of the *Veterinary Mutual Defence Society* was read. The Chairman observed that the value of such a society to the profession must be great, and he heartily commended it to the members of this association, who afterwards joined the society in large numbers.

Mr. T. Greaves then read his paper "On Diseases of the Frontal Sinuses and Teeth of the Horse, coupled with Quidding."

Mr. President and Gentlemen,—I feel that I am occupying a distinguished position in being permitted to read the first paper on "Veterinary Medicine" before the members of the *Midland Counties Veterinary Medical Association.* At the same time I beg to disclaim all pretensions of arrogating to myself the honour of this distinction. It is you who have generously conferred it upon me, and I gratefully accept it as being the greatest compliment you could have paid me.

The subject I have undertaken to bring before your notice is, I believe, a practical one, and one deeply interesting to the veterinary surgeon; therefore, its consideration by you cannot fail to be attended with useful results. I have not selected it because I presume that I understand it better than my brother practitioners, but because it has so happened that I have had to treat a great number of these cases, even, perhaps, a greater number than have fallen to the lot of veterinary surgeons under ordinary circumstances. Those of you who are readers of the *Veterinarian*—and I trust you all are—will remember that in 1857 I recorded my thoughts upon this subject in that Journal, when I adverted to many cases; and since then I have had several more under treatment. I have thus had many opportunities to study these diseases and to become familiar with them. I would here observe, if we take a review of the practice of our fellow-practitioners we shall find it to be a fact that one man has had greater facilities presented him to study some particular disease, and has become consequently more successful in the treatment of it than have others. Again, another person has had more numerous opportunities of seeing some other form of disease, and he has become more successful in the treatment of that; and so on. It is the natural result, if numerous opportunities exist, and close and careful observation be made, that we become thoroughly acquainted with any special disease. Now, what I want the members of this and kindred associations to do is this, that a practitioner who has made some particular disease his favourite study, and as a consequence has become distinguished in the treatment of it, for such a practitioner to read a paper on it before the members of the different associations. Let his views and mode of treatment be stated fully, plainly, and frankly; for we meet to little purpose if we do not enhance the usefulness of our common profession.

I have taken a strong interest in the success of these associations, and I believe this course of procedure cannot fail to render these meetings of the members not only pleasant, agreeable, and attractive, but deeply interesting and profitable to all. It must also ensure lasting benefit to veterinary surgeons by augmenting their knowledge and increasing their usefulness to the public at large.

I will now ask you to give me your kind attention to the diseases we are called together this afternoon especially to consider, viz.: *Diseases of the frontal sinuses of the head of the horse, of the teeth, and quidding, or "cudding," as it is sometimes called.* We shall find here a very interesting field of inquiry, affording ample scope for a most useful discussion.

1*st. Diseases of the Frontal Sinuses.*

In considering this division of my subject, it is not my intention to dwell upon that temporary affection denominated catarrh, but rather that state known by the name of "Chronic nasal gleet." Gleet is an abnormal discharge secreted from a diseased mucous membrane, the causes of which are multifarious; and these I shall take into consideration first, and then proceed to state what I have found to be the best mode of treatment.

Causes.—The most frequent cause of nasal gleet is neglected or maltreated

catarrh. Instead of the nasal discharge ceasing in about a week or ten days it becomes protracted and assumes a stationary and constitutional character; the membranes of the head, ere long, become thickened and assume an unhealthy condition; the discharge itself becomes vitiated and fœtid, owing to ulceration of some of the cartilages or bones of the cavities. Some of these cases, if in young horses of a good strong healthy constitution, living in well-ventilated stables, and kept upon good sound food, will do a great deal of work, and that for many years; indeed, they may even thrive and get fat, notwithstanding during all the time an offensive discharge takes place from one or both nostrils.

I am quite satisfied that gleet and glanders are distinct diseases. Still, where all the circumstances are favorable to its development, I can conceive the possibility of a case of gleet degenerating into glanders. The time required to arrive at this state will depend upon the nature of the horse's constitution. No doubt it is much accelerated by his occupying a close, foul, and ill-ventilated stable, by hard work, and unwholesome food; and if diabetes be superinduced, it is almost a certain precursor of glanders. Its development may take one month, or twelve months, or even years. In stating this, I am not attempting to deny that true glanders results from some specific morbid poison. The virus that produces glanders will produce no other disease than glanders; and the same may be said of smallpox, of scarlet fever, of typhus fever, of Asiatic cholera, the venereal disease, and, lastly, the cattle plague. Thus, "like produces like." These diseases are dependent upon a train of phenomena that differ essentially from those that give rise to pleurisy, or pneumonia, or enteritis. These constitute abstruse and grave questions, and are fit subjects for these associations to grapple with, and, if possible, to dispel the clouds that envelope them.

In speaking of chronic nasal gleet, Professor Spooner, at page 525 in the 'Transactions of the Veterinary Medical Association' for 1841-2, states, "I feel convinced that many horses are condemned for being glandered which are really the subject of this disease. I am sorry to be compelled to add, although I am satisfied these diseases are not contagious, that they appear to me to be as difficult to overcome as glanders."

Another cause of nasal gleet is the presence of some foreign body lodged in the sinuses of the head. This is often indicated by the discharge coming from one nostril only, and a weeping, if not a discharge of pus, from the eye on that side. In some instances lymph is thrown out, which becomes organised; in others a quantity of pus is collected, and remains in the cavity after an attack of ordinary catarrh. In such a case we frequently find the discharge will stop for a day or two, or even a week, and then burst out again and again. From this the inference is clear that the disease still exists, that the secretion is not suspended, but has been collecting in some cavity. Now, I wish you to understand this point well; for I am very anxious to establish this one fact clearly and distinctly in your minds, namely, that the only opening into the frontal cavity and interior of the superior turbinated bone which has connection with this cavity, is at the upper part of the superior turbinated bone, and that the only opening into the anterior maxillary or facial cavity and interior of the inferior turbinated bone, which has connection with that cavity, is at the upper part of the inferior turbinated bone. Thus it will be seen that these two cavities are distinct from each other, and that these openings I have named are the only openings out of them—one in each cavity for the escape of pus. It is only when either of these cavities is full to overflowing, or the pus is thrown out by the uptilting of the head, that the pus can find its way into the nasal chamber. When the cavity is full of pus you may arrive at a pretty certain conclusion by means of percussion. There is a certain and perceptible difference in the sound which the experienced and familiar ear can recognise. If you tap with your knuckle over the cavity which in health is empty, it yields a sound indicating hollowness or emptiness, but when in a state of disease and full of pus the sound emitted is a dull, heavy, dead sound. If the disease has existed any length of time, and the cavity is full of matter, the diploe and the bones over the cavity become softened, swell out, and a deformity of that part occurs externally; while the matter will become inspissated, resembling cream cheese. At other times

the foreign body is not in the cavities, but merely lodged between the turbinated bones; some masticated food having got there accidentally, perhaps, by the animal coughing just when in the act of swallowing. It cannot get into the cavities of the head by this means. I remember well the case of a valuable cart-horse, seven or eight years ago, which had a most offensive and very suspicious discharge for many months from one nostril. Much had been done for him without any benefit, when one day, on my looking as far up the nostril as possibly I could, in a favorable light, I perceived a few fibres of hay. I at once had a thin, small, long hook of gutta percha made, and passed it a long way up between the turbinated bones, and drew down a considerable portion of masticated hay in one mass. It was in an advanced state of decomposition, and from that moment the discharge began to diminish; in a few days it ceased altogether, and never since that time has there been the slightest return of the discharge. At other times it is the result of a quantity of masticated hay, &c., getting into the cavity through an opening in the floor of the cavity, this opening being produced by an injury or defective teeth. In the *Veterinarian* for 1857, page 256, I have recorded a case of this kind. I had another case lately, in which the cavity had been emptied again and again by trephining; but it became refilled, and at last the horse was destroyed. I found the frontal, malar, superior maxillary, and the interior of the superior turbinated bone quite full and impacted with decomposing masticated food. I have brought the bones of the head of this animal with me, and it will be seen that there is a passage behind the last molar tooth, and another tooth behind it—a supernumerary one. This passage leads directly into the maxillary cavity; and behind the last molar, in the other branch of the upper jaw, will be seen concealed another supernumerary tooth. The teeth in this head, it will be seen, are all perfectly sound; so also were the teeth in the head of the case recorded by me at page 256 in the year 1857. In these cases we frequently see portions of masticated hay escape.

Another cause of nasal gleet is diseased fangs of teeth occasioning disease of the alveoli bones, and the membrane in contact with it. This is indicated by tenderness in the jawbone opposite the tooth, fetid smell, &c.

Another cause, making the fourth, is polypus, which is occasionally met with. In this case the discharge is now and then accompanied with streaks of blood.

Treatment.—To understand this division of my subject properly, it is necessary that we should be accurately acquainted with the anatomy and physiology of the parts; and not only the form, situation, and uses of these cavities, but also to understand the nature and physiology of that most vascular and sensitive membrane, the Schneiderian; also that lining the turbinated bones and the ethmoideal cells. The bones forming the base of these structures are like unto fish-scales covered with the above membrane. I have brought a number of heads with me, in which these cavities are laid open in order to assist us in seeing our way clear, and forming a correct opinion. Some of them, as you will see, are diseased specimens, showing the ravages of disease.

If my patient is labouring under an attack of catarrh which is altogether recent, I frequently endeavour to encourage the nasal discharge by giving him hot mashes, so that he may breathe the steam as he eats them. I also order his head to be held over a pail half full of boiling water with hay in it, and stir it with a stick, or you may use the nose-bag with hot mash in it if you like. I believe this to have a soothing and very beneficial effect upon the membranes of the head. If the throat is sore I may stimulate it, or even blister it. If the soreness in the throat is considerable, I never give a draught in such a case, and very seldom indeed a ball. After a few days I expect the discharge to diminish, and soon to cease altogether, and in the majority of cases this does occur; but occasionally we meet with a case in which this desirable consummation does not take place; and at the end of six or ten days we feel it is necessary to do something to arrest the discharge. We will suppose that we have discontinued the hot food and steaming, and instead we now give cold mashes and allow cool air; and if the fever has abated, give dry corn, good beans, and tonic medicine, once, twice, or even three times a day, if necessary; also allow exercise, and

increase in severity the counter-irritation by holding a hot iron near the part while the blister is rubbed on around the throat and between the jaws; blister also over the frontal sinuses. Further, we will suppose that the discharge—which is in about one case in every fifty—does not abate: three or four weeks have elapsed, the glands under the jaws feel knotted, the discharge has become fetid and flaky, and the appearance of the Schneiderian membrane is bluish-red, pale, soft, and flabby. The case has now assumed too important a character to be rattled over glibly. It is observed that the coat stares, the animal looks unhealthy, and is falling away in his condition. The dose of sulphate of iron, with gentian and ginger, may be increased gradually from one drachm each a day to four drachms each, and given even four times a day, always making the ball up with treacle or syrup. I have never known injurious effects to follow these doses. I endeavour to saturate the system with this medicine—and I know no treatment to equal it—until the fæces become quite black. If the appetite fails him, I may discontinue the medicine for a day or two, and interpose a mild dose of aloes; and then, if it is necessary, begin again with the tonic agents. I also order him to have good sweet hay, sweet dry oats, and plenty of good English beans. I also let him eat his food out of a bucket on the floor. If this method does not succeed, I am not acquainted with any method (speaking medicinally) that will. I have tried cantharides, as recommended by Mr. Vines, sulphate of copper, advocated by Prof. Sewell, and arsenious acid, by Prof. Gamgee, and all other favorite remedies; but all have proved in vain. Injections up the nostrils, with a view to wash out the nasal and frontal sinuses, displays the prevalence of a mistaken notion of the anatomy of these parts. As *these cavities are inaccessible from below*, it is utterly impossible to inject any fluid into them from below upwards. The most injections can do is to stimulate and possibly constringe the mouths of the vessels in the membrane of the nasal chamber between the two turbinated bones.

Trephining.

This is a bold surgical operation, but not in the slightest degree a dangerous or a formidable one; and if the operator comprehends clearly the situation and form of the cavities, and all the necessary points are properly attended to, it cannot be too highly spoken of. I have performed it between forty and fifty times, and we must have recourse to it in the case I have illustrated above. I nearly always operate with my patient standing; but there are some unruly brutes that require casting. It has been observed that all highly organised beings have thin skulls, but it will be found that our patient has a moderately thick one. I make my opening in the superior maxillary bone, at the lowest or most dependent point of the cavity. If I find matter occupying that cavity, I take care to wash it out thoroughly. I do this by using a bent tube fixed to Reid's pump, which I always employ. I can thus wash out, not only the superior maxillary sinus, but also the molar and frontal sinuses, together with the interior of the superior turbinated bone, all from one aperture. If I do not find pus occupying any of these cavities, then I bore the anterior maxillary or facial cavity. It must be distinctly borne in mind that this cavity is a separate and distinct cavity from those I have just named. If I find pus in this cavity I wash it out thoroughly. But supposing I find no matter in any of the cavities—I am speaking now of one side of the head—the side that has been discharging, well, I would inject a copious torrent of tepid water into first one and then the other cavity, with a view of washing out any pus that may have collected in the interior of either of the turbinated bones, as shown most beautifully in this plate at the end of the volume of the 'Transactions of the Veterinary Association' for the year 1841-2. I would also use the pump daily, and in some cases I may resort to a weak solution of alum. This method I have seldom found to fail. Sometimes we meet with pure pus in these cavities, at other times a material resembling cream cheese in its consistency, and again at others masticated food. In all such cases I continue with my medicine, and allow the animal good keep all the time.

I beg to call yonr attention particularly to this washing-out business, as I know

it to be a fact that the operation frequently falls into disrepute in consequence of this not being efficiently done. There are many horses now working that I have so treated, which had been condemned to the knacker's yard by other veterinary surgeons. But supposing, after all this is done, that we do not succeed in curing our patient? Do not run away with the idea that I wish to conceal the fact that some of these cases defy our best treatment. I have had cases in which the discharge has never ceased throughout life, and apparently has done the animal no harm; but in others, in which all the conditions were favorable to the development of disease, the discharge has become more and more vitiated. The disease then ceases to be a local one, and assumes some general characteristics, indicating a sort of transition from gleet to glanders. The skin becomes tight upon the ribs, the inferior extremity of the turbinated bone swells and projects into the nasal passage, causing a snuffling noise; the glands under the jaws become larger and more tumified, and at length the unwelcome appearance of ulcers show themselves upon the unhealthy Schneiderian membrane. And now we may safely infer that tubercles are developing themselves in the lungs; the cough becomes more and more cavernous in sound, the animal loses flesh rapidly, his coat stares, his appetite and strength fail him, farcy buds make their appearance, and the emaciated, loathsome animal, sinks and dies, or he is destroyed.

Diseased Teeth.

The diseases that affect the teeth of horses are the result of natural causes, or else of injuries to either lower or upper jaw, or both. The sharp overhanging flanges on the outside edge of the upper grinders, and on the inside edge of the lower grinders, which in some cases cut the tongue and inside the cheeks so as to interfere with mastication, only require, as you well know, the free use of the tooth rasp. This I shall not dwell upon. In this, as in every other operation, let the veterinary surgeon be distinguished for his thoroughness. We sometimes find the last tooth at the far end of the mouth of the lower jaw is projecting up half an inch or three quarters of an inch, or a part of the tooth only is projecting, owing to that point being beyond the wearing surface of the opposing tooth. This sometimes grows so long as to cut into the gum, and even the bone of the upper jaw, and thus seriously to interfere with mastication. It is very difficult to get at this tooth either to rasp it or to chop it off, but with Mr. Gowring's or the French instrument—which are here exhibited, lent for the occasion by Mr. Lawson—it can be done. We are called upon sometimes to examine a horse that has become all at once unable to eat his food, and upon a careful examination it is found that a small sharp nail or a pin has become driven firmly between the teeth; or there may be a fractured tooth, or a loose tooth. These things are sometimes overlooked until they have set up a considerable amount of unhealthy inflammation, or a sarcomatous tumour is developed.

There is a constant flow of saliva from the mouth, and after a time caries of bone takes place (as seen in this morbid specimen kindly lent for the occasion by Mr. Howell of Rochdale), emitting a most offensive smell, Of course, in all such cases the method to be observed is a careful extraction of the offending body, after which the parts are to be thoroughly cleansed with a weak solution of alum.

Another cause of diseased teeth is a defective order in the arrangement of them. There is a considerable intervening space between each of the molars, and in some horses these intervening spaces are only between some particular teeth on one or both sides. This state of things may be attributable to a wrong direction given in the process of dentition. In these cases a quantity of food often becomes impacted and remains fixed between these teeth until it decomposes, causing decay of the gums and teeth, and ultimately getting into the cancellated texture of the jawbone itself, when an opening is made into the cavities of the head and masticated food is forced up this passage, and the cavities become full, as we have shown earlier on in this paper. I have trephined several horses in this condition, all the cavities being crammed full of masticated food. Now, what can be done? It fills again and again. This is one of the points I ask for information upon, nor must it be lost sight of. I hope it will be dealt with in the discussion. Pro-

fessor Gamgee recommends that the passage be plugged up with gutta percha. I have never done it myself, and if any of you have I hope you will give us the benefit of your experience.

Supernumerary Teeth.

Whenever we see an irregularity in the proper order of the incisors, it is reasonable to infer that the same irregularity exists in the molars; in fact, experience proves this to be the case. In some horses we find wolf's teeth. It is customary to knock them out, but this is unimportant. Again, in some horses some of the temporary incisors are retained, and unless extracted they may give a wrong direction to the permanent ones. When it is seen that they are doing this, it is better to draw them out. I have seen superdental fœtation, in which there has been eight permanent incisors in both the upper and lower jaw, and in one of the heads I have brought with me there are seven molar teeth in either side of the upper jaw. In some instances these are attended with very serious and injurious consequences.

Extraction of the Grinders.

This operation in the horse is more easily said than done. I have done it a few times with the key, but I never did it satisfactorily to myself. There are some cases of diseased fangs of molars, or abscesses existing in the fangs, in which drawing the tooth is the rational course to adopt. Professor Gamgee recommends trephining just above the tooth, and with a punch to drive back the tooth. This is an ingenious method, although I have never adopted it; but others may have.

Quidding or Cudding.

This is a most interesting question to study, and one that requires more light to be thrown upon it. It is the putting back of the food into the manger, after the horse has had it in his mouth, chewing it, and sucking it some time. On closely watching an inveterate quidder, it would appear the horse does it as a matter of course; he seems to have got into the knack of doing it, and he cannot leave it off; for just as the mouthful of food appears to have been thoroughly masticated and ready for deglutition, just as you are expecting to see it pass down the œsophagus, at that moment he opens wide his mouth, draws back his lower jaw, and out falls a large quid of food.

Quidding is generally attributable to sharp teeth, or to defective teeth, or extreme unevenness, resembling steps upon the grinding surface, as shown in this morbid specimen kindly lent by Mr. Peter Taylor; or it may arise from diseased teeth, or the projection of the last molar. In some cases, it is observed that the grinding surface of the molars have a very remarkable steep slant from their inner to their outer edges, and that this peculiar conformation is the same in all the grinders in both branches of the lower jaw. Of course the grinding surface of the upper molars must have a conformation to adopt them to fit this form of mouth. Now, in closely watching horses with this form of mouth, when in the act of eating, it would appear as if every now and then the jaws got locked, and the animal was obliged to at once cease mastication, and to open wide his mouth in order to overcome the locked state his jaws had got into. There are numbers of such cases that can be set right by merely giving the teeth a thorough and careful rasping. But my experience has convinced me that there are also cases of quidding, in which the teeth are not in any way at fault, and this is another of those questions which I hope will not be lost sight of in the discussion; and further, that you will give me your opinion of cases in which the teeth being in perfect order, to what other cause can quidding be described. I would like to ask another question, How is it that a quidder can swallow food consisting of masticated corn, but not masticated hay? I ask you to enable me to answer this question. In some cases, we can hear a mumbling sound as the horse chews his food; in others, the act of mastication, to all appearance, would seem to be performed perfectly, but when the horse ought to swallow he cannot do so, or rather he does not make the attempt to do it. At one time, I thought this was referable to a species

of palsy of some of the muscles of the pharynx. But then the question arises, how do you account for his being able to swallow his corn without any difficulty? This fact seems to render the theory untenable. Then again as to it being a habit, like crib-biting, this is a theory I do not feel myself competent to either confirm or to deny. I am rather inclined to this opinion, that those cases of quidding, in which the teeth are not at fault, the habit arose originally in consequence of a soreness in the lining membrane of the fauces or pharynx, possibly some ulceration, and the horse suffering a considerable amount of pain every time he swallowed pellets of masticated hay, these pellets being coarse, rough, and long in the fibre, he began to dread making the attempt; and instinct suggested to him the method of putting it out instead of experiencing the suffering produced in attempting to swallow. Thus, he got into the habit of putting his masticated hay back, and the habit remains with him after the soreness in the membrane has subsided. In respect to the pellets of masticated corn, these being softer and more pultaceous, they are more easily swallowed, and do not occasion any fear in doing it; hence it is he does not throw them back, but passes them at once over the pharynx. I have been, perhaps, a little tedious in going into these details, but it being a somewhat new theory, I have thought it to be necessary. I feel further confirmed in this theory from the fact, that I have seen and heard of many such cases ceasing the habit of quidding by repeated blisters being applied to the throat. Of course, I always carefully examine and attend to the teeth. I order soft food to be given, consisting of steamed barley, good sweet hay chopped fine, and occasionally I administer a dose of physic.

I have now brought my task to a close, and beg to thank you for the attention you have so kindly paid me. In the discussion which will follow, I beg of you to bear in mind that the object of these associations is to convey to each other useful practical information. Let us remember the saying of John Hunter, that "surgery will never advance until professional men have the courage to publish their failures as well as their successes." Let this spirit ever actuate the members of these associations, and we shall find it will fill us with a sense of something nobler than we are, and purer than we feel, as it elucidates and embodies truth.

The President, with a view to open up the discussion, made several pertinent remarks on the Essay.

Several questions were asked by Mr. Rushton respecting the superior maxillary sinuses, and the essayist's mode and situation for trephining.

Mr. Attwood related a case of catarrh, in which the food still passed down the nostrils, although all acute symptoms had subsided.

Mr. Pyatt related an instance which had occurred in his practice, of the food passing down the nostrils, arising from a stricture of the œsophagus.

Mr. P. Taylor thought catarrh a specific disease. With respect to quidding, he said, it would arise from a variety of causes, such as irregular teeth, contraction of the lower jaw, and diseased teeth. He also related a case of paralysis of the lips and nostrils, causing quidding, in which he had adopted all known modes of treatment, but without success.

Mr. King said he had been successful in several cases of nasal gleet, without having recourse to the trephine. The plan he adopted was to raise the animal's head, and pour down the nostrils a very weak solution of the sulphate of copper, and administer tonics internally.

Mr. Garrard observed, that the essayist had not made any mention of the inhalation of chlorine gas in the treatment of nasal gleet. He could speak of it as a valuable adjunct in that disease, having used it in several cases. At the same time he had exhibited tonics. In other cases of long standing, or where the bony structure, &c., had become diseased, he had trephined the frontal sinuses and injected them with water, and afterwards had recourse to the inhalation of chlorine. He thought the gas might permeate those cavities which were inaccessible to fluids from below. As it respected quidding, he had seen a singular case in a cow, and had found the cause to be a fragment of a common blacking bottle, which had become fixed between the cheek and the molars.

Mr. Taylor (President) had likewise employed chlorine gas successfully in the treatment of nasal gleet. A horse belonging to an officer at the barracks had a discharge from one nostril, and was thought to be affected with glanders. On this account he was removed from the barracks, and placed under his care. He had him put in a well ventilated box, fed him liberally, and caused him to inhale this gas for twenty to thirty minutes daily. The animal was under this treatment some five or six weeks; but before he was returned to the barracks, he was inspected by the veterinary surgeon of the regiment, and pronounced free from disease. He gave no medicine.

Mr. Blakeway stated he had tried the inhalation of chlorine gas, but he could not say he had been so successful as the other speakers. One case of nasal gleet had been caused by the impaction of a ball in the upper part of the nasal chamber. With regard to quidding, he thought in some cases it might arise from debility, and mentioned two cases he had treated systematically with tonics, &c.

Mr. Lawson, P.R.C.V.S., said, with regard to quidding I am of opinion that it arises in some instances from habit. He related the following case that had come under his observation in practice. A horse, belonging to a large firm in Manchester, was sold as incurable to a dealer, but from the day he changed his stable he was never noticed to quid again. Also another instance of a hunter that had recently commenced quidding, for which he could not find a cause, and he had the animal turned out to grass.

During the time he had been engaged in practice he had seen many cases of glanders; but he did not think that nasal gleet often terminated in glanders. He would not say there were no instances, but he had not seen any. The treatment he adopted was similar to that advocated by Mr. Greaves in his paper. After trephining the frontal and other sinuses, he had found great benefit from injecting them in the first instance with a weak solution of carbolic acid. He also was of opinion that it was advantageous to inject a large quantity of cold water. For this purpose he had an instrument made, which was fastened to the tap in his yard, and he allowed a stream of water, of considerable force, to pass through the frontal sinus and nasal chamber for ten or fifteen minutes at

time. He believed the long-continued use of the water had a beneficial effect on the diseased parts, acting as a stimulant and tonic to them. With respect to the use of tonics, he thought, in those cases where the horse fed well and was in good condition, they were not requlred; but he would allow a good supply of old beans, oats, and hay, and place the animal in a well ventilated stable or box. When he resorted to tonics he preferred the compounds of iron; these not producing that serious effect on the system which those of copper do. He was much pleased to have had the opportunity of hearing the opinion of various gentlemen on the effects of chlorine gas; he would give it a trial.

Mr. Taylor (President) spoke highly of the employment of tonics. He generally gave iron with aniseeds and cantharides in powder in the food, and had been successful in several cases, without having to trephine the frontal sinus. He concurred in the statement made, that it was requisite to attend to the diet of the patient.

Mr. Burley, Mr. Stanley, and Mr. Poyser, and other gentlemen, also took part in the discussion.

The Essayist, in reply to the various speakers, said, that when food or fluid passed back again through the nostrils, it was an evidence of the existence of acute laryngitis. If the animal continued to do this, it might reasonably be inferred that some abnormal condition of the velum palati existed. He preferred administering balls to the giving of powders, because these latter were often left at the bottom of the manger and wasted, or the food refused; but in giving balls you make sure of your patient getting the medicinal agent. He felt very much obliged to Mr. Garrard for bringing forward the subject of the employment of chlorine gas as a medicament in this disease. Although it had been advocated in the pages of the *Veterinarian* he had never used it, and thus, having had no experience of it, he had not alluded to it in his paper. In reference to tonic medicine, he felt no little diffidence in differing in opinion with so eminent an authority as Mr. Lawson, but he was sure that gentleman would not respect him less because they differed in opinion on this point of treatment. He was himself a strong believer in the efficacy of tonics in this disease; but at the same time he looked upon good keep as an essential in the treatment of these cases. He had never known any ill consequences to arise from the exhibition of the salts of iron, but had seen serious injury, and even fatal results follow from pushing those of copper too far, especially in old horses. This may arise from the fact that copper is a foreign element in the blood, while iron is one of its normal constituents. In reference to using cold water in washing out the cavities, he had always employed warm water in preference, but the idea had struck him very forcibly since listening to the remarks of Mr. Lawson and other gentlemen, that cold was preferable to warm water. This meeting, he thought, would be an illustration of the benefits that result from a free interchange of opinions and experience among the members of the profession.

A vote of thanks to Mr. Greaves for his able paper was proposed by the President, seconded by Mr. Blakeway, and carried.

The usual vote of thanks being accorded to the Chairman, the meeting terminated.

THOS. CAVE, M.R.C.V.S., *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE members of the North of England Veterinary Medical Association held their twelfth quarterly meeting on Friday, October 19th, at 1 o'clock, in the Central Exchange Hotel, Newcastle.

Mr. C. Stevenson, President, in the Chair.

After the election of office-bearers for the coming year, and other private business was disposed of, Mr. W. Hunting read the following paper "On Bloodletting."

MR. PRESIDENT AND GENTLEMEN,—Of all the agents used in the treatment of disease none perhaps is more powerful than bloodletting. The operation is so simple, the popular belief in it so strong, and it being recommended by so many of our authorities, we cannot wonder at its wide-spread adoption.

Still, when we consider the number of cases fatal in spite of it, cases of recovery without it, and cases of a similar nature treated with and without it, some of both dying, and some recovering, we are forced to the conclusion that it is, in a large number of cases, either abused or neglected.

Now, either the abuse or neglect of such a powerful agent calls for a serious inquiry into its merits and demerits; and where could we better go to than to one of our veterinary medical associations—associations composed of a number of practical men—men of diversified opinions, and of differently placed spheres of observation? I submit that to no other place could we go with the same chance of success to have any professional subject thoroughly ventilated. Far be it from me to think that I can throw any new light upon the subject. I have merely collected a few facts, and drawn some conclusions therefrom. It is for you, gentlemen, aided by your great experience, to say what rule, if any, shall guide us in our practice—when we may bleed with benefit, and when we must not bleed. I have the honour of introducing the subject, and I fully appreciate it.

Bloodletting is of two kinds—general and local. General bleeding is the abstraction of blood from a large vessel, either from an artery (arteriotomy) or from a vein (phlebotomy or venesection). Locai bleeding is the withdrawal of blood, either directly from the affected part, or from its immediate neighbourhood. Local bleeding may partake of the character of general bleeding, if carried to any extent, by affecting the system at large. I shall consider each kind separately.

First, of general bleeding.—I shall, for convenience and clearness, speak first of its effects, then of the conditions in which I think it is indicated, and, lastly, of those conditions in which it is unnecessary or even injurious. First, then, of the effects.

The most apparent effect is its *sedative action on the whole system.* The blood being the natural stimulus to the heart and nervous centres, it necessarily follows that the removal of a portion of that stimulus must lessen the heart's action, and modify the functions of the nervous centres, thus causing a less rapid discharge of the various functions of the body. The sedative effect produced by bleeding

differs from that produced by medicines in that it is more lasting, the latter passing off in a few hours, the former remaining for days, or it may be for weeks. The abstraction of blood weakens, as I have just said, the heart's action; the vital fluid is not propelled with the same vigour, the nervous centres do not get their proper supply of blood, and thus the sedative effect is kept up.

It may be said that the blood will soon resume its natural quality and quantity. This brings me to the next effect.

It deteriorates the blood.—This effect is most easily understood. The blood consists of serum holding in solution corpuscles and fibrine, with certain salts. The most essential of these constituents are the red corpuscles and the fibrine.

A defective supply of red corpuscles is always associated with debility; but, *vice versâ*, a large supply of red corpuscles is always found in conjunction with activity, strength, and vigour. This clearly shows that a proper proportion of the red corpuscles is indispensable to health; and when we consider that they are reproduced with greater difficulty than any other structure, and that the serum is quickly replaced, we can understand that there will be a relative scarcity of corpuscles, and increase of water in the blood, thus impoverishing and deteriorating it.

Bleeding also favours exudation. It is a physiological fact that a certain density of the blood is favorable to its proper circulation, and to the balance of the functions of secretion and absorption. It is also well known that in obedience to the laws of osmosis, an increase in the watery constituents facilitates the passage of portions of the blood through the coats of the vessels; in other words, favours exudation. Now, is it not reasonable to suppose that if there is already in a part a tendency to exudation, the abstraction of blood will, if that tendency is not removed, hasten the exudation?

It promotes absorption. An experiment has been performed, which clearly shows how quickly the blood-vessels absorb after large bleedings.

A horse is taken, which we will say contains twenty quarts of blood. Now, if we remove eight quarts one day and four the next, we should expect only eight quarts to be left; but by bleeding we could obtain, perhaps, twice this quantity; at any rate more than was left in him. This extra quantity is, of course, made up by absorption. In practice we notice this effect of bleeding in the rapid disappearance of the swelling, after bleeding in some cases of weed or lymphangitis.

Lastly. General bleeding has the effect for a short time of *lessening the total quantity* of blood in the body. This, however, is soon rectified by absorption.

I have now, I think, mentioned all the principal effects of general bleeding. Let me repeat them shortly.

1st. It produces a sedative effect on the whole system, brought about by the diminished force and frequency of the heart's action, and by the impaired functions of the nervous centres.

2nd. It deteriorates the blood, rendering it poorer in corpuscles and fibrine.

3rd. It favours exudation by increasing the watery constituents.

4th. It promotes absorption.

Lastly. For a short time it lessens the total quantity of blood in the body.

With these indisputable effects of bleeding before us, we can better consider the indications for and against it.

I shall now draw your attention to *those conditions in which I think it is indicated.* And here let me say that if my views differ from those of, perhaps, many of the members—and I urge them a little warmly—I hope you will not think me wanting in respect to your greater experience.

I only wish to arrive at a sound rule of practice; I think, by stating my views *in toto*, that I shall get them thoroughly sifted—the sound ones confirmed and the erroneous ones corrected.

To return to the indications of bleeding. The opinion of many is that the pulse is a never-failing indicator. Some are guided by its character, others by its frequency. Of the former, some say bleed if the pulse is hard; others, bleed if it is full. The latter say bleeding is indicated when pulse is above sixty per minute. Although some of our veterinary works give a long list of diseases in

which we are to bleed, I do not think any one now-a-days bleeds merely according to the name of the disease; always in this disease, never in that; utterly disregarding the stage, type, and complications of the disorder. As regards the pulse, it is valuable only in conjunction with other conditions. Considered alone, it is apt to mislead. The pulse of an anæmic patient is quick; violence or fear will also raise the pulse considerably. Congestion of lungs is attended with a full pulse, and debility with a hard one; and bleeding is, to say the least, inexpedient in either condition. Both the character and frequency should be considered, in fact.

To know when to bleed is not attained by the presence or absence of any special phenomena, it requires a kuowledge both of the effects of bleeding and of the pathology of the disease.

We meet with a case in which the heart beats too quick, we wish to lessen this action; and knowing that the diminishing of the heart's action is an effect of bleeding, we, perhaps, may bleed. But one effect must not be considered alone; all the others must be kept in mind; for, whilst diminishing the action of the heart, we also impoverish the blood, thus, perchance, laying the foundation of a dropsy, or, it may be, leaving the animal in a condition incapable of withstanding the attack of any epizootic.

The diseases in which bleeding is indicated are such as are capable of withstanding its injurious effects, and profiting by its beneficial ones. Of such diseases I think there are very few.

First, I may mention *lymphangitis*. Of course, I do not indiscriminately bleed in every such case, only in those attended with considerable exudation, and affecting plethoric animals. Here, of course, we bleed to promote absorption, and the disease not being of an asthenic nature, nor the animal weak, we need apprehend no bad consequences.

Milk fever in cows is a disease for which bleeding is usually spoken of as a valuable remedial agent. It would be more correct to say *preventive* agent. Whilst the premonitory symptoms are present, I have seen the very best effects follow venesection: but let the disease once get a hold, and bleeding is worse than useless. In this disease we nearly always have plethora. It is extremely seldom seen attacking an ill-conditioned animal; never, I may say, save in an animal predisposed to it by a former attack.

There is also a disease in sheep dependent entirely upon plethora; I mean braxy. Now here, again, general bleeding may be a most valuable preventive agent in an emergency.

In these three diseases I have no doubt a strong purgative would have the desired effect, if we could produce catharsis instantaneously, but we cannot and we dare not lose time. In the first case (lymphangitis), we are afraid of any of its effused materials becoming organised, and a permanent thickening of the leg resulting.

In the two other cases named above we have to fear effusion on the brain, and shortly death.

There may be other cases in which general bleeding is beneficial; but as I cannot distinguish them, I will pass on to my last division of general bleeding, viz.: *those conditions in which it is unnecessary or even injurious.* . . . If there is one condition more than another in which bleeding has been unconditionally advocated, it is inflammation. At first sight, it seems plausible enough to say that an increased supply of blood causes and keeps up inflammation, remove some blood and you remove the cause. "Remove the fuel and the fire will go out." But this is a very rough and superficial view of inflammation. The object of bleeding is to relieve the overloaded capillaries. Now let us inquire if the abstraction of blood really has this much to be desired effect? We know that in an inflamed part there is stagnation of blood; immediately around this we have increased quantity but decreased flow, still further away, increased quantity and increased flow, the thin coats of the vessels are distended and in a semi-paralysed state.

This condition, too, has a tendency to spread. If we remove a quantity of the vital fluid, thus still more depressing the nervous power of the part, do we

not weaken the neighbouring vessels? and do we not by thus weakening them, lessen if not altogether destroy their chance of successfully well standing the progress of the disorder? I believe we do.

I even dispute the possibility of withdrawing blood in any useful quantity from the seat of inflammation. No doubt blood may be removed from an inflamed organ, as from the udder in mammitis; but is it not reasonable to suppose that the blood will come from that part where its course is free and accelerated rather than from that where it is obstructed? I know that by the aid of a microscope small stagnant portions from an inflamed part have been seen to detach themselves and move off in the circulation as the result of bleeding, but this action is only temporary, ceasing with the cause. These portions, moreover, are so small and few, that we can understand how that, as Dr. Tanner says, "general bleeding, unless carried to a very dangerous extent, will not diminish the amount of blood in an inflamed part." There are other and weighty objections to bleeding in inflammation. Among others I may mention, "that it may so modify the character of the effusion as to promote its degeneration and decay, and, consequently, render it incapable of being either organised or absorbed." Again, bleeding is a depressing agent of the greatest power, "and depressing agents favour the extension of morbid action, and deprive the system of the power of rallying from the effects of disease;" and, lastly, I hold, "that when an inflammation is once established it is not possible to cut it short."

For these reasons, then, I think bleeding in inflammation is opposed to a sound pathology. In practice, we find that it is falling more and more into disrepute. In human medicine Dr. Burnet has succeeded in curing sixty-two out of sixty-five cases of pneumonia without bloodletting. In veterinary practice I find that Mr. Hunt, of Birmingham, and Professor Gamgee, sen., both treat laminitis without bleeding, and with great success. The late Mr. McKenna, of Belfast, never bled in pneumonia, and treated it with average success. I have seen the quickest recoveries from pleurisy in those cases which were not bled, and I have no doubt, gentlemen, that some of you will bring to bear in the discussion cases of inflammatory disease successfully treated without bleeding.

The next condition I shall notice is one in which bleeding is not only unnecessary, but positively injurious. I refer to fevers.

Fever is due to some poison in the blood, and is characterised by weakness, increased waste of tissue, and general derangement of function. The great object, therefore, is to purify the blood, and to counteract the weakened state of the system. Now, no one will say that bleeding can render an impure blood pure; and the symptoms and probable results of all fevers are diametrically opposed to loss of blood. We never, I think, now hear of any one bleeding in any of the contagious fevers of the ox. It was tried, and justly laid aside; but the simple fever of the horse, influenza, some practitioners still treat by bloodletting—upon what principles I know not, nor do I think they could themselves well explain.

In the *Veterinarian* for September I saw the report of the proceedings of the *Liverpool Veterinary Medical Association.* The paper was on bleeding, and principally in regard to its propriety in influenza. The essayist seemed to rest his belief in bleeding on the fact of the loss of eight influenza cases not bled, and the recovery of a number of others after—I should say in spite of—bleeding. All the animals were heavy cart-horses, belonging to one firm. Those that died were the first affected, consequently would be neglected in the first stage. Their dying would awaken the owners, who would then obtain professional advice at the commencement of each fresh case. This, not to mention the extra care, will, I think, account for the seeming anomaly.

The essayist quotes Youatt in support of his opinions. I do not object to his quoting Youatt. No doubt his books were useful some years ago, but now, in 1866, it is too much to ask any one "to agree with me that the work is a fair average one to quote from;" more especially immediately after telling us that that authority recommends bleeding in strangles, tetanus, palsy, fever, roaring, diabetes, and albuminous urine. In my opinion, the most ignorant cowleech or farrier could scarcely treat more irrationally than this. Dr. (now Sir Thomas)

Watson, who may be called a strong supporter of bleeding, says: "Nay, the presence of fever, when it is not the consequence but the precursor of inflammation—when it depends upon a specific poison in the blood, and the inflammation has arisen as one of its casual complications—may *prohibit* any form of bloodletting." To put it in other words—never bleed in fever, if even there is inflammation as a local complication.

There are yet one or two conditions in which bleeding is contraindicated. It is needless, I think, for me to stop to point out the error of bleeding for any complaint in weak, debilitated animals, so I will bring this part of my paper to a close by calling attention to one very common condition in which I consider bleeding injurious. I refer to conditions in which the tendency to death is by asthenia (failure of the contractile power of the heart). Starvation, certain poisons, and some diseases cause death in this way. These diseases, when not quickly fatal, are characterised by slow recovery, and great and rapidly increasing debility. I may mention as examples, tetanus, phthisis pulmonalis, diabetes, and red water in cattle. This furnishes us too with a powerful objection to bleeding in phrenitis. In this disease the function of the brain is impaired, the nervous power wanted to supply the heart is lowered, very little more and the heart's action will cease. Death will take place from asthenia.

Bleeding is an agent which depresses the heart's action, therefore when that action is already depressed, and even in risk of total extinction, we must be careful not to increase that risk. We must not then bleed in phrenitis.

There are many instances of inflammation where there is depressed nervous power and impaired action of the heart. Notice the great debility following pneumonia and pleurisy. But I need not multiply examples.

There are some doubtful cases in which we cannot readily conclude whether to bleed or not.

Let me conclude my remarks on general bleeding by a quotation from Dr. Barlow's 'Practice of Medicine.' He says, "It perhaps ought always to be remembered that the number of cases in which bleeding is admissible is far less than those in which it is injurious or even dangerous—a consideration which ought to have great weight in doubtful cases."

A very few words I must say on local bleeding. Properly speaking, local bleeding consists of the abstraction of blood slowly from the small vessels of an affected part; but in veterinary practice, if we bleed from the brachial or vena saphena veins for foot affections, we call it local bleeding. Now, I hold this to be an error, and shall only consider bleeding from the small vessels of a part as local bleeding.

There are different methods of performing topical bloodletting; cupping and scarifying are principally resorted to, the latter most commonly.

Where we can get directly at the affected part, no doubt scarification is beneficial in cases of congestion and inflammation. The conditions in which it is most beneficial are cases of superficial inflammation, as in erysipelas, when it acts by directly removing the exudation. As regards its action by derivation, altering the direction of the circulation from the affected part to the scarified one, I, for the reasons stated under general bleeding, cannot believe in it. And now, gentlemen, hoping I have not wearied you, let me in conclusion say, that as we set out with an inquiry into the merits and demerits of bleeding, I am of opinion that in by far the majority of cases the ill counterbalance the good effects of bloodletting.

A very interesting discussion followed the reading of the paper, most of the members supporting the practice of general bleeding in acute inflammations, especially of the digestive organs.

A vote of thanks to the President closed the proceedings.

W. Hunting, *Secretary*.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

This society held its usual quarterly meeting at Bradford, October 24th, 1866.

There were present:—The President, Mr. MacTaggart, who took the chair; Messrs. Cuthbert, Greaves, Dray, Broughton, Morgan, Hon. Sec., M.D.S., Howell, Lord, Jas. Freeman, Ths. Horne, J. S. Carter, Joseph Freeman, Jno. Freeman, J. Bale, Peter Taylor, Manchester, S. F. Fallding, M. E. Naylor, J. W. Anderton, Chas. Patterson, T. A. Byron, and the Secretary.

At the conclusion of the preliminary business, Mr. Naylor not having arrived, the Secretary proposed the resolution of which Mr. Naylor had given notice. In doing so he remarked that he did it as a mere matter of form, his sympathies being in favour of the amendment.

Mr. Carter, in seconding it, stated that he did not do so from any feeling he had in its favour, but simply that the arguments for and against it might be brought forward.

The motion was as follows: "That it is the opinion of this society that it is advisable the subscriptions should be raised to £1 11*s.* 6*d.* annually; and it shall be eligible to employ its funds for the protection of its members."

Mr. Greaves proposed as an amendment, "That this society resolves to co-operate with the Liverpool, Lancashire, West of England, and other veterinary medical associations, in forming and supporting the "Mutual Defence Society." In doing so, he compared the two schemes, showed many advantages that his plan had over the original motion, and concluded an eloquent speech by saying, "*the benevolent feature will always be held of most importance, and will subordinate the defence feature.*"

Mr. Dray seconded this amendment, stating that he thought Mr. Naylor's motion was objectionable, inasmuch as the fund so raised would be but exceedingly small, and would be swamped by a single action at law. He was glad to find the "benevolent idea" becoming more and more developed. A society having *that* object in view must have the sympathy of all good men.

Messrs. Broughton, P. Taylor, Morgan, and the *Secretary*, also spoke in favour of the amendment; which, upon being put, was most unanimously and heartily carried, and afterwards every member in the room enrolled themselves in the *Mutual Defence Society*.

Mr. Carter read a paper on "Fistulous Abscesses," the consideration of which was postponed till the next meeting.

A vote of thanks having been given to the retiring office-bearers and acknowledged by them, *Mr. Dray* proposed, and *Mr. Naylor* seconded, "That Mr. Thos. Greaves be President of the Society for 1867."

Mr. Cuthbert proposed and *Mr. Fallding* seconded, "That Mr. Chas. Secker be President."

The two propositions being put to the vote, Mr. Greaves received 11, and Mr. Secker 6 votes. The former gentleman was therefore declared duly elected.

Messrs. Patterson, Fallding, and Lord were elected Vice-Presidents.

Mr. Williams, honorary secretary, and Mr. Dray, honorary treasurer, were re-elected.

The next meeting of the society will be held at Leeds, on the last Friday in January next, when the President will deliver his inaugural address.

W. Williams,
Hon. Secretary.

Veterinary Jurisprudence.

Butterworth *v.* Jagger.

DISEASED FACIAL BONES OR NOT?

Keighley; *Nov. 7th,* 1866.

Gentlemen,—In the November number of the *Veterinarian* appears a brief report on this trial. Though meagre in itself, it is contrary to the truth; and as it reflects on my professional character, I trust you will allow me space in your next issue to vindicate myself. With the evidence for the plaintiff I have nothing to do; but for the defence it is stated, that Mr. Carter and Mr. Collins were members of the Royal College of Veterinary Surgeons, and Mr. Emmott, of Keighley, a member of Mr. Gamgee's school, Edinburgh. I am not annoyed at the distinction here made; but as the question was never put in Court to which school I belonged, it does appear rather mysterious how the reporter to the *Yorkshire Post,* &c., should have made so singular an addition, when two Halifax papers contain nothing of the kind.

But though he (the reporter) appears very sagacious in making deep discoveries, he has yet something to learn about Mr. Gamgee's school. I therefore inform him that Mr. Gamgee does not grant certificates of membership. His students present themselves before the Board of Examiners of the Royal College of Veterinary Surgeons; and those who are fortunate enough to pass that honorable body of gentlemen, receive the only legalised diploma in these realms. One of these I have the honour to possess. The principal complaint I have to make against the reporter is, that I "did not discover the depression of the bones of the face." This is not true; in proof of which statement I give the reports that were in the Halifax papers

at the time. The Halifax *Courier* says, "Mr. Emmott, veterinary surgeon, Keighley, said, the horse was as sound a one as there was in Halifax. A depression in the bone did not always produce unsoundness," &c. The Halifax *Guardian* says, in reference to this point, "A depression in a bone did not always produce unsoundness." I enclose along with this the Halifax *Courier*, which verifies my statements. Then, as to the summing up, any one who reads the report, as given in your Journal, will conclude that the verdict was for the full amount claimed, namely, £12 10s. But it was not so. His Honoûr said, the evidence of the professional men on the part of the plaintiff was according to what they had seen; and though the horse might not have "roared," when examined by the professional men for the defence, yet it might nevertheless have been a roarer. The jury after a short consultation returned a verdict for the plaintiff for £7, with costs; adding, that they greatly regretted the contradictory evidence of the professional testimony, which prevented them coming to a more satisfactory verdict.

Yours respectfully,

D. E. Emmott, M.R.C.V.S.

To the Editors of the 'Veterinarian.'

Bradford; *Nov.* 12*th*, 1866.

Gentlemen,—Under the above heading appears a report in the November number of your Journal, copied from the *Yorkshire Post*, &c., which report is incorrect, and contrary to the truth, therefore I hope you will allow me a short space in your next Journal to reply to it. As far as the evidence for the plaintiff is concerned, I shall make no remark. But for the defence it would appear by that report, that the three veterinary surgeons, namely, myself, Mr. Collins, and Mr. Emmott, denied that there was any depression of the facial bones; in fact, it positively states that the latter gentleman did not discover it. This is totally false, and in proof thereof the two Halifax papers, one of which I enclose you, give our evidence on that point as follows: "Mr. Carter said,—There was a slight depression on the cheek bone (near the frontal sinus), which was of no consequence whatever, and no injury to the animal." "Mr. Collins said,—The depression in the frontal sinus was no injury to its working." "Mr. Emmott said,—A depression in the bone did not always produce unsoundness." By that report also it would appear that I admitted there was a discharge of blood from the nostril. This too I totally deny, as I can certify having seen the horse almost daily at his work since July 5th to the present day, and have never yet been able to detect the slightest discharge of blood from either nostril, or any other impediment in his respiration. The following question was put to me in Court:—Supposing there had been a discharge of blood from the nostril, how would I account

for it? My answer was as follows:—"That the horse might be suffering from a catarrh (a cold)." And lastly, any one reading that report would conclude that the jury gave a verdict for the full amount claimed, namely, £12 10s. But such was not the case; the jury, after a short consultation, gave a verdict for plaintiff for £7, with costs, adding, that they greatly regretted the contradictory evidence of professional testimony, which prevented them giving a more satisfactory verdict.

Yours most respectfully,

JOSEPH SHEPHERD CARTER, M.R.C.V.S.

To the Editors of the 'Veterinarian.'

MISCELLANEA.

PRESENTATION OF TESTIMONIALS TO MISS DICK AND MRS. FRIEND.

TO

MISS DICK.

MADAM.—At a meeting of the Lancashire Veterinary Medical Association, held at the Royal Institution, Mosley Street, Manchester, on the evening of Wednesday, June the 6th, 1866, the President, W. Haycock, Esquire, in the chair, the following resolution was proposed by Peter Taylor, Esquire, V.S., of Manchester; and seconded by John Lawson, Esquire, V.S., also of Manchester:

"That the members of the Lancashire Veterinary Medical Association express their condolence and sympathy to Miss Dick, of Edinburgh, at the death of her brother William Dick, Veterinary Surgeon, and late Professor of Veterinary Medicine and Surgery to the Veterinary College of Edinburgh, and that the President, together with the Secretary, form and transmit a memorial to that effect."

In accordance with the above resolution we beg, on behalf of the above-named association, to express our deep sympathy towards yourself, on the death of so excellent a brother, and while we thus lament his loss on your behalf we at the same time express our high admiration of the genius and unwearied industry of one who for more than fifty years laboured so earnestly for the advancement of his profession.

We deeply deplore his death, and as a small tribute of that veneration and gratitude towards him, we desire you to receive this memorial in the spirit in which it is sent, or as conveying but a

feeble expression of our sorrow at a loss to be deplored, not only by the members of this association, but by the veterinary profession at large.

WILLIAM HAYCOCK, *President*,
JAMES HASLEM, *Hon. Secretary*.

TO

MRS. FRIEND.

MADAM,—At the 15th Quarterly Meeting of the Lancashire Veterinary Medical Association, held at the Royal Institution, Mosley Street, Manchester, on the evening of June the 6th, 1866. the President, W. Haycock, Esquire, in the chair, Thomas Greaves, Esquire, Veterinary Surgeon of Manchester, proposed, and Peter Taylor, Esquire, Veterinary Surgeon of Manchester, seconded the following resolution:

"That a memorial, expressive of the sympathy and condolence of the members of this association, be proposed and transmitted by our President and Secretary, to Mrs. Friend, upon the death of her husband, the late Mr. Alfred Ephram Friend, Veterinary Surgeon and Honorary Associate of this Society."

In accordance, therefore, with the above resolution, we beg, on behalf of the members of the Lancashire Veterinary Medical Association, to express our deep sympathy towards yourself, for the bereavement you will sustain from the death of your husband.

We lament his death. He was highly esteemed, not only for his numerous Christian and private virtues, but for his high professional attainments as a veterinary surgeon. He practised the veterinary art for more than forty years, during which time he proved, by his valuable contributions to veterinary pathology, that he was an earnest labourer in the progress and advancement of the veterinary art.

WILLIAM HAYCOCK, *President*,
JAMES HASLEM, *Hon. Secretary*.

OBITUARY.

WE have to record the death, on April 21, of Mr. J. F. Bickford, M.R.C.V.S., Kingsbridge, Devon, aged 60. His diploma bears date March 17, 1832.

Also of Mr. J. Brydon, M.R.C.V.S., Liverpool, in the 36th year of his age, on Nov. 6. His diploma bears date April 29, 1861.

Also of Mr. William H. E. Boyden, of Boston, United States. His diploma bears date April 30, 1859.

ERRATUM IN NO. 467.

Page 929, line 14, *for* "the benevolent element," &c., *read* "the benevolent element will always subordinate the defence feature of this society, and be held to have the first claim."

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